CHINESE AND WESTERN INTERACTION SURROUNDING THE PREPARATIONS FOR THE PEKING MAN DIGS OF THE 1920s

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ABSTRACT

In the 1920s a series of paleontological digs took place in China. These digs led to the discovery of remains of an early hominid that became commonly known as "Peking Man." Although these discoveries are often represented as being accomplished almost exclusively by either Chinese or almost exclusively by foreigners, such as Johan Gunnar Andersson, a Swede, or by Davidson Black, a Canadian, in fact the historical evidence shows the digs to be a cooperative effort between the China Geological Survey and several outside, foreign individuals and organizations. This international cooperation during a key period in the development of Chinese science is a subject deserving of attention. This paper offers a look at how this cooperation came about. Also discussed is the importance of this international cooperation and way in which events were affected by competition among nations and institution.

BIOGRAPHICAL SKETCH

Peter L. Huston graduated from the University of Albany with a B.A. in Asian Studies and a minor in Spanish language and literature sometime in 1987. In the fall of 2004, he was admitted to Cornell, again to study Asian Studies. In 1995, he authored the book, Tongs, Gangs and Triads –Chinese Crime Groups in North America, which was placed on the recommended reading list of the US Immigration Department's Chinese Human Smuggling Class. A former newspaper and freelance journalist, he is the author of several magazine articles, including China, Chi, and Chicanery: Examining Traditional Chinese Medicine and Chi Theory which appeared in the September/October 1995 issue of *The Skeptical Inquirer* and Trying to understand traditional Chinese medicine which appeared in the winter 1994 issue of *The Skeptical Inquirer.* Besides working as a newspaper journalist, he has worked in several other fields including time spent as an Emergency Medical Technician with ambulance services, done large event / concert security, been a technical writer, and lived and taught English in Taiwan for more than four years.

ACKNOWLEDGEMENTS

Acknowledgements are due to many people for their assistance with this paper. This work began as a project in Sherman Cochran's "Problems in Modern Chinese History" course. Therefore, not only Dr. Cochran, a man whose knowledge and expertise continue to amaze me, deserves to be thanked, but also my many classmates and colleagues in that class who provided valuable feedback and suggestions. These had a great effect on the final form of this paper. In hindsight I really should have listened to them all much more carefully and earlier on. Jin Yu, Bo Zhang and Han Xin need to be thanked for repeatedly asking the very important question, "Where were the Chinese scholars?" Peter Lavelle needs to be thanked for asking what Peking Man meant to the Chinese of the time. Martin Loicano needs to be thanked for explaining Peter Lavelle's important question to me in small, easily understandable words I could grasp. Bo Zhang also needs to be thanked for his assistance and expertise in scanning the pictures as well as help with using Chinese language word processing equipment.

It cannot hurt to publicly say as well that I have often felt extremely lucky to have Dr. Cochran as my academic advisor while here at Cornell.

While working in Dr. Cochran's course, Magnus Fiskesjo's book, China Before China, became a frequently consulted source of both information and inspiration. Therefore, it was with both great surprise and a sense of undeserved good fortune that I learned of not only his coming to Cornell, but also his willingness to take a look at an early version of this project. Ultimately, when Dr. Fiskesjo agreed to serve as thesis advisor, this sense of undeserved good fortune continued.

Many other individuals assisted. Adrienne Mayor and Mark Norell were both good enough to respond politely and professionally to e-mail requests for information and leads on resources relating to both the history of paleontology in China as well as the current Chinese trade in illegally obtained fossils. Kenneth A.R. Kennedy, Ph.D, Cornell human paleontology instructor, needs to be thanked for reading an early draft. Numerous people should be thanked for guidance in general and helping me get my life to the point where successful work in graduate school and on this thesis became possible. In no particular order these include Jaime Flores, Heather Johnson, Ian Pinkerton, Carla Sofka, Carl Frederick, Drew Anderson, Timothy Lake, Bingru Xie and countless others who took a chance on me and provided guidance when I needed it. Countless more people at Cornell, including faculty, staff and both graduate and undergraduate students need to be thanked for making me feel welcome here after many years spent in places that were quite unlike the hallowed halls of this fine Ivy League institution. For better or worse, they were often too numerous to mention by name but their support was quite welcomed and at times much needed. The faculty and staff of the Cornell library system also need to be thanked for this paper probably could not exist without their much needed patient and professional assistance at several key points. All errors are my own fault.

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Introduction:

The Peking Man Digs And The Issue Of Their Historical Framing.

In the early twentieth century, the remains of a variety of early hominids were found in China. The most notable discoveries occurred not too far from Beijing, which at the time was commonly referred to in English as "Peking." For this reason, the race of beings whose remains were found became commonly known as "Peking Man."

Much has been written upon Peking Man from a variety of perspectives and for several purposes. These reports sometimes seem to vary. Some claim that Peking Man was found exclusively by Chinese paleontologists or that foreign assistance and aid with the digs came in response to an initial Chinese discovery. This is particularly the case in much, but not all, of Chinese popular journalism about the finds in the People's Republic of China.[1]

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[1] For an assessment of the role of politics and nationalism in Chinese paleoanthropological research see Barry Sautman's *"Peking Man and the Politics of Paleoanthropological Nationalism in China."*

For examples of popular Chinese journalism where the discovery is credited exclusively to Chinese archeologists see:

"Fossilized skull of Peking Man exhibited in Beijing" dated September 22, 2003 from the People's Daily Online archive at http://english.people.com.cn/200309/22/print20030922_124650.html on January 18, 2006.

or

"New findings throw limelight on Peking Man site" dated June 24, 2004 from the People's Daily Online archive at http://english.people.com.cn/200406/24/print20040524_147362.html on January 18, 2006.

or

Yet most Western reports of the digs give the primary responsibility to Westerners. Prominent among these are Davidson Black, a Canadian, and Johan Gunnar Andersson, a Swede, who worked together, following up on the discoveries of Karl Albert Haberer, a German. Also frequently mentioned is Black's successor, Franz Weidenreich, a German Jew whose career had reached a dead-end under the anti-Semitic policies of the Nazis.

Thus it is a striking feature of much of the literature that Chinese scholars appear to be either overstressed or left out altogether.

This paper will attempt to examine the many interactions between Chinese and non-Chinese, as well as the motivations and framework for these actions, which led to the series of digs in the 1920s that discovered the Peking Man remains. It is hoped that by doing so the history of the discoveries can be better understood and some of the apparent contradictions in reports about them resolved. It is also hoped that through resolving these issues, a clearer picture of events will emerge, one in which it can be seen that the Peking Man digs of the 1920s came about as a collaborative effort between both Chinese and non-Chinese.

"Peking Man Skull Finder Dies" from the People's Daily Online archive at http://english.people.com.cn/200107/09/print20010709_74519.html on January 18, 2006.

or

"New lead in Peking Man skulls' mystery" from the People's Daily Online archive at http://english.people.com.cn/20031103_127479.html on January 18, 2006, states that Black and Weidenreich became interested in the digs in response to the discovery of the skull by Pei Wenzhong.

A Note on the Naming of Names.

When communicating ideas from one party to another, it's important to take time to ensure that both parties have reached mutual agreement on the meaning of the terms being used. To do otherwise is to risk disaster. Furthermore, in academia, at times it's essential to clarify and explain not only the meaning of a term, but why a certain term, or a certain form of a term, has been chosen over others. Such choices often bring subtle and not-so-subtle connotations, some conscious, some otherwise, into the work and might perhaps indicate a possible bias or preference on the part of the author.

First, as for the term for the subject of the primary focus of this paper, the so-called "Peking Man," I have chosen to continue with the traditionally-used, common name for this hominid whose remains caused so much excitement throughout the twentieth century and continue to do so on into the twenty-first century.

This name was first coined in 1926 by Amadeus Grabau and has been widely used ever since.

As Sigrid Schmalzer notes in her work, The People's Peking Man: Popular Paleoanthropology in Twentieth Century China,[2] an argument could be made for the use of possible alternate terms, for instance, "Peking Person" or "Beijing Man" or "Peking Woman" among others. However, for the sake of simplicity and tradition, like Schmalzer, the use of the term "Peking Man" shall be maintained throughout this paper. Despite the continued, widespread use of the term "Peking Man" and the fact that this is

[2] Sigrid Schmalzer, "*The People's Peking Man: Popular Paleoanthropology in Twentieth Century China,"* XVI.

the term used in most Chinese journalism on the subject, it should be mentioned that there are some in China today who seek to replace the term "Peking Man" with "Beijing Man."[3] As this movement seems to remain small at the time of this writing, and its future uncertain, it seems that a switch from "Peking Man" to "Beijing Man" would be more likely to confuse readers than clarify any of the issues being discussed.

As for the scientific name of Peking Man, although, as discussed in this paper, Davidson Black designated the species Sinanathropus pekinensis in 1926, in the 1950s paleontologists agreed upon a simpler version of the early hominid family tree and it was decided that Peking Man was a form of the species Homo erectus. Although this revised picture of hominid evolution has undergone significant and continuing modifications, in particular to reflect new concepts of "punctuated equilibria,"[4] specimens of the beings referred to as Peking Man are still considered to be Homo erecti. Therefore, when scientific designation of the species is needed in this work, the term Homo erectus shall be used.

In a similar manner, there has been some shifting of names as well as grouping of specimens among pre-modern, hominid fossil specimens. In this work, unless otherwise specified, when a reference is made to a non-Peking Man fossil specimen or species, the current scientific designation for the species is used, unless specifically stated otherwise. With Chinese names an attempt has been made to place names in uniform Pinyin.

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[3] For instance, see *"Bone Decorations come to light among relics in Beijing Man's cave,"* dated 12/28/2005 from the People's Daily Online archives at http://english.people.com.cn/200512/28/print20051228_231376.html on January 18, 2006.

[4] See Ian Tattersal and Jeffrey Schwartz, *"Extinct Humans,"* 45-55, for an explanation of these changes and the concept of "punctuated equilibria."

Part One: Europe and Sweden

Paleontology And Nationalism In The Late Nineteenth And Early Twentieth Centuries

In the nineteenth and early twentieth centuries, human paleontology was a new and still primitive science, and there was little hard data available to answer questions about human origins. The early prehistory of humanity was seen as a blank. There were no pre-Neanderthal hominid remains anywhere in the world that were universally accepted as likely to be those of human ancestors.[5]

[5]Although the discovery of Java Man in 1891 by Eugene DuBois had provided such a find (in fact, Java Man and Peking Man are generally considered to be members of the same species, Homo erectus.) by the 1920s unusual problems surrounded this find. Eugene DuBois had uncovered only a single skull of the Java Man. Throughout much of his life, DuBois had mental health problems and exhibited eccentric behaviors. By 1920 he had taken the skull of the Java Man and buried it under his kitchen floor and would not let other people look at it. He, himself, was convinced that it was not in any case a human ancestor, but instead an example of a specimen of a giant gibbon-like animal. Noel T. Boaz and Russell L. Ciochon, *"Dragon Bone Hill,"* 1.

Furthermore the specimens were not universally accepted.

Opinions on Java Man varied greatly, particularly since the skull and the femur of the specimen were found roughly forty feet apart from one another.

According to Charles Blinderman, six experts, mostly German, thought the skull was that of an ape. One thought that the femur was from an ape, while another thought it was from an intermediate species between ape and man. Thirteen experts thought the femur was human.

Eight mostly French experts thought that the specimens had come from a single individual.

Perhaps most amusingly, one French authority thought the remains came from an "illegitimate union" between an orangutan and a human. In other words, the specimen was claimed to be literally half-ape and half-man. (The above information comes from Charles Blinderman, 7-8, please note that Charles Blinderman does not footnote this material or give sources although his work contains an extensive bibliography.)

Marcellin Boule, an eminent scientist of the early twentieth century, declared the specimens to be those of a Gibbon. (See Charles Blinderman, 31.)

Naturally, to many, the absence of such finds was taken as a challenge, and in some circles there was a great desire to find specimens that could be conclusively seen as those of early human ancestors. Among Western paleontologists it was thought that finding the so-called "missing link" between man and ape would be a great accomplishment,[6] and there was a race to do so. This race manifested itself in several ways.

First, there was a competition among many nations that wished to have their own scholars be the ones to unlock the story of the origin of mankind. Thus an element of nationalism was inherent in the historical quest for knowledge of man's origins.

Most prominent European nations of the time had made significant contributions to the emerging science of paleontology.

When we look at Germany, for instance, German scientists had made significant contributions to many sciences, including paleontology, and Germany was already home to several significant paleontological finds. The first recorded pre-human hominid fossil, a specimen of Neandertal Man (Homo neanderthalensis) was found in Germany in 1856 in the Neander

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As time went on, Java Man's discoverer, Eugene DuBois, became increasingly concerned with these criticisms and came to believe that he had found the remains of a giant gibbon. (See Charles Blinderman, 18.)

Although a jaw of Homo heidelbergensis, a being which is often considered to be ancestral to both modern humans as well as Neandertals, had been discovered in Germany, a single jaw specimen was not much to base theories on.

Some considered the Piltdown Hoax specimens to be those of early hominids, but there was much controversy surrounding them even at this time.

[6] In his 1938 work, *"Children of the Yellow Earth,"* 95, written several years after its discovery Johan Gunnar Andersson, while describing the prehistory of mankind, states, "And finally there appears on the scene the Douglas Fairbanks of the Prehistoric drama, the Peking Man."

Valley.[7] The first specimen of Heidelberg Man (Homo heidelbergensis) was found near Heidelberg in 1907.[8] In fact, as we will see later, although it was not considered significant at the time, the first known Peking Man fossil, a single tooth, was purchased by a German in a Chinese fossil shop in 1900. Moreover, following Davidson Black's death from cardiac arrest in 1934, his successor, Franz Weidenreich, was also a German who had received his training in the rapidly expanding German universities.

The French were also active in paleontology throughout this period. Many early finds of pre-human fossils had been found by French paleontologists on French soil, in 1908, for instance, the finds at La Chapelle.[9] At this time, several prehistoric cultures had been named by the French, including the Chellean, Acheulean, Mousterian, and the Magdalenian, in effect, developing an international framework for organizing new finds.[10] Furthermore, it was not uncommon for French paleontologists to look down on other nationalities because of this. For instance, around the turn of the century some French paleontologists enjoyed referring to their English counterparts, who had found no skeletal specimens, but had recovered stone tools, as chaisons de caillous, which translates as "pebble hunters."[11] Through use of this term, they were implying that English finds were too recent and too insignificant to be considered of much importance.

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[7] Charles Blinderman, *"The Piltdown Inquest,"* 7.

[8] Ian Tattersall and Jeffrey Schwartz, *"Extinct Humans,"* 31, as well as Charles Blinderman, 8-11 and 19. The exact year comes from Charles Blinderman, 19.

[9] Charles Blinderman, *"The Piltdown Inquest,"* 19.

[10] Charles Blinderman, *"The Piltdown Inquest,"* 11.

[11] Charles Blinderman, *"The Piltdown Inquest,"* 11.

Such disparaging remarks reveal precisely the competitive race mentioned earlier.

Father Teilhard de Chardin, a Frenchman, who was noted then as a prominent paleontologist and today mostly as a philosopher, was a continuous presence on the periphery of the Peking Man digs while also involved in other paleontological digs in China during this period.

The Dutch took pride in the fact that so-called Java man had been found by Eugene DuBois, a physician in the service of the Dutch colonial military, in 1891 in the Dutch colony of Java. The discovery was made with the support and assistance of the Dutch colonial administration which, among other things, supplied him with convict workers to assist with the labor needed for his excavations.[12]

Although there was much controversy surrounding the implications and meaning of the so-called Java Man, and these controversies remained unsettled at the time of the Peking Man discoveries discussed in this paper, they showed Dutch interest and contribution to the field of paleontology.[13]

There were similar developments in other European nations. For example, in Belgium, at a town called Spy, Neandertal remains had been found.[14] This increased the already competitive atmosphere which existed in the European context.

The English were in an unusual position at this time in paleontological circles, due to the uncovering of the Piltdown Man remains in 1912. While

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[12] Richard Milner, *"The Encyclopedia of Evolution –Humanity's Search for its Origins,"* 146-148.

[13] For details on the views and role of "Java Man" during this period see footnote 5.

[14] Charles Blinderman, *"The Piltdown Inquest,"* 6.

the fossils were later proven to be hoaxed, at this time they were still considered genuine. Thus the English were considered to have made a significant contribution to uncovering the fossil history of our species.[15]

In fact, although no one knows for certain either the exact identity of the hoaxer or the motivation behind the creation of the Piltdown specimens,[16] one possible motivation behind the hoax, or, perhaps even more significantly, behind the willingness of the hoax to be believed, was nationalism manifesting itself in an attempt to create the impression that the earliest known hominid remains had been found in England by Englishmen.[17]

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[15] The full story of the Piltdown hoax is fascinating but lies well outside the scope of this paper. However, a brief recap of the incident seems worthwhile. In 1912, Charles Dawson found two specimens of what was often described as "an apeman" or the "missing link." This being seemed to have a large brain capacity, an ape-like jaw and the ability to walk erect. Accepted as genuine it was given the scientific name Eoanthropus dawsoni (The Dawn Man of Dawson).

In fact, the "fossils" were pieces of a modern human skull and an orangutan's jaw that had been carefully broken, reworked with files, and then dyed so that they would appear to be parts of the same ancient fossil specimen.

Although the specimens were considered real and the hoax undiscovered until the early 1950s, at which point someone examined them using improved dating techniques and discovered that they were not anywhere near as old as had been previously believed, throughout the period of the Peking Man digs they were considered genuine.

As an aside, although the hoax was not fully exposed until the 1950s, long before this time paleontologists had dismissed the possibility that Piltdown Man could be an ancestor to modern man as the specimens simply did not fit the emerging pattern that was being pieced together from other pre-hominid specimens.

[16] Although, as with most unsolved mysteries of history, speculation remains rampant, current thinking as to the identity of the hoaxer focuses on Charles Dawson, the man who owned the property on which the Piltdown specimens were found, or on Martin Hinton, a man who has been proven to have created the dye with which the remains were stained to look old. (Stringer discusses both suspects.)

[17] See Ian Tattersall and Jeffrey Schwartz, *"Extinct Humans,"* 16 - 17.

"Betrayers of the Truth --Fraud and Deceit in the Halls of Science," by William Broad and Nicholas Wade and *"The Pleistocene Farce" ("Posse im Pleistozan")* from Der Spiegel both

It is significant from our perspective that at this time the Piltdown find was taken quite seriously. A surprising number of people involved with the discovery of the Peking Man in the 1920s had been directly involved in doing research on or had developed opinions on Piltdown Man. Teilhard de Chardin was among its initial discoverers.[18] In 1914, while studying in England, Davidson Black visited the Piltdown site with Arthur Smith Woodward, at that time the keeper of Geology at the British Museum in South Kensington. Smith Woodward had apparently been impressed by Black when the two had been introduced by one of Black's instructors. Although Black questioned the stratigraphy of the find he accepted the bones themselves, suggesting that perhaps they had been placed at this site by some sort of tide.[19] Franz Weidenreich, Black's successor, had studied the finds as well, but seemed to be quite skeptical and dismissive of what he saw.[20] This may represent a clash between the rigor of science and the nationalist aspirations behind the hoax.

In summary, nationalism clearly seems to have been an important aspect of and motivator behind the involvement in the French, German, English and Dutch search for human origins all across Europe.

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cite nationalism as a possible motivation behind the hoax and / or the ease with which it was believed.

[18] from *"Piltdown Man –the Bogus Bones Caper"* by Richard Harter, 1996-1997, http://www.talkorigins.org/faqs/homs/a_nebraska.html (accessed March 26, 2005). In fact, some, including Stephen Jay Gould, have suggested Teilhard as a possible perpetrator of the hoax, although there arguments are far from being widely accepted and many other possible perpetrators have also been suggested as well.

[19] Dora Hood, "*Davidson Black –A Biography,"* 27-30.

[20] Noel T. Boaz and Russell L Ciochon, *"Dragon Bone Hill,"* 59-60.

Since Sweden had not yet contributed to the field, it is not surprising that the Swedish people and government also expressed nationalistic sentiments as one reason to aid in the Peking Man digs. With nationalism having such a prominent influence on the development of early paleontology, it should be no surprise that the Swedes were not immune to this force, and, as we shall see later, viewed contributions to find specimens of early man to be a good way to add to the prestige of their rapidly industrializing nation located on the periphery of European civilization. For instance, not only did the Swedish government provide direct financial support for Andersson's digs in China,[21] but on May 31, 1920, prestigious Swedish archeologist Oscar Montelius wrote the following as a direct appeal for support for Johan Gunnar Andersson's potential archeological efforts:[22]

> Few words are needed to convince us here in Sweden, what great importance it would have for our small people, if Swedish scientists were to be recognized for spreading light over the oldest history of the ancient cultural country of China, and if those Swedish scientists' work were to have been made possible by powerful support from other open-minded Swedish men .[23]

[21] Magnus Fiskesjo and Chen Xingcan, *"China Before China,"* 34, states that in 1920, for instance, the Swedish parliament voted to provide 90,000 Swedish Crowns for Andersson's work. This was just one of several instances when Swedes funded the digs as well as one of many sources of funding for the digs.

[22] At this time there appears to have been much overlap between the sciences of archeology and paleontology in China among the endeavors of Johan Gunnar Andersson, Ding Wenjiang and the China Geological Survey.

[23] Magnus Fiskesjo and Chen Xingcan, *"China Before China,"* 32.

The statement shows that it was felt that wealthy Swedish citizens would respond with financial support for archeological digs if it were believed that it would lead to successful work into understanding early Chinese history by Swedish scientists. It was felt that such work would add to the prestige of Sweden in the international arena and that, as a "small people," the Swedish could benefit greatly from such an increase in their prestige.

Why Sweden? Possible factors behind the involvement of Sweden in the Peking Man digs of the 1920s.

The Swedes had a role in the Peking Man digs that was much more significant and important than might have been expected based on the nation's significance in Europe. It's interesting to speculate on whether or not there were special circumstances that might have made the people and government of Sweden desire to contribute to projects such as the Peking Man digs more than other nationalities.

There are several reasons that the Swedish might have felt a need to raise their prestige among other nations. In the mid-nineteenth century, Sweden was among the poorest countries in Europe.[24] A lingering sense of national insecurity may still have existed.[25]

During the period from 1850, when the Swedish population was roughly 3.5 million, until 1920, when the Swedish population was slightly

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[24] Lars Sandberg, *"The Case of the Impoverished Sophisticate: Human Capital and Swedish Economic Growth before World War I,"* 225.

[25] Inge Jonsson, *"Swedish Culture in a European Context,"* 152-153.

By comparison, much of the intellectual and court life of eighteenth century Sweden focused on an idealization of French culture, a situation that also hints at national insecurity but is of more questionable relevance to events two centuries later.

more than 6.0 million, roughly 1.2 million Swedes left their homeland and emigrated to live abroad, primarily in the United States.[26] Although the emigrants seem to have done better than average in their new homeland,[27] this situation also hurt national pride and confidence. (Sweden was not alone in this concern. Many European nations of the late nineteenth and early twentieth century period were quite concerned about the economic and cultural effects of widespread emigration. For instance, emigration, and fear of the effects of emigration, was a major factor in Germany's colonial endeavors and policies.[28]) Furthermore, in the early twentieth century Sweden was not known as either a great colonial power or as an important military power as it had been at other times in history, particularly the seventeenth century. Sweden had remained neutral in the first world war and had lost its last remaining overseas possession, the tiny Caribbean island of St. Bartholomew's, in 1877, roughly the same period when many European nations were beginning to fully embrace colonialism.[29] (Ironically, one possible reason the Chinese seem to have been comfortable working in partnership with the Swedes is precisely because they were not a great

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[26] Inge Jonsson, *"Swedish Culture in a European Context,"* 154-155.

[27] Lars Sandberg, *"The Case of the Impoverished Sophisticate: Human Capital and Swedish Economic Growth before World War I,"* 234-237.

[28] See Woodruff D. Smith, *"The Ideology of German Colonialism, 1840-1906,"* for details. Jake W. Spidle, Jr., *"Coonial Studies in Imperial Germany,"* 243-244, also discusses this issue, particularly in the context of the Bad Weilbach's Colonial Women's School (Kolonialfrauen-schule), which was founded in 1911 to ensure that male German settlers to the colonies (particularly in South West Africa) would be able to have good German wives to "uplift" both them and the colony while striving to ensure, among other things, that the settlements would keep its racial purity.

[29] According to the *"Encyclopedia Britannica,"* Eleventh Edition, Copyright 1911, Published in Cambridge, England at the University Press, Volume XXIII, the small Caribbean island of St. Bartholomew's is roughly eight square miles in size. It was first occupied by France in 1648 and ceded to Sweden in 1784. In 1877, Sweden sold it back to France.

colonial or military power.[30] It's worth noting that there is a Chinese saying about the benefits of befriending "distant states.")

These are all reasons why the prominent citizens and scientific community of Sweden might have felt a need to raise their national prestige. Other factors might have encouraged this need for national prestige to manifest itself in a project such as assistance with the Peking Man digs. First, Sweden had a much more educated population than most European nations of the time.[31] Since understanding and appreciating a project such as the Peking Man digs, or even the theory of human or animal evolution in general, requires a certain level of education, this may have been an important factor. In fact, Darwin's theory of evolution was accepted among Swedish museums long before British museums.[32] (During the nineteenth and early twentieth centuries, before the advent of the mass-media age, museums were much more influential in the spread of ideas and knowledge among the public than today.[33] Therefore, this is quite important.) One factor in the importance of science and science education in Sweden at this time, is that science and the application of science was seen as a possible means for remedying Sweden's poverty and marginality among European nations.

Sweden also had a tradition of travelling scientific researchers dating back to the eighteenth century, a tradition within which Johan Gunnar Andersson's efforts in China seem to fall easily.

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[30] Magnus Fiskesjo and Chen Xingcan, *"China Before China,"* 34.

[31] Lars Sandberg, *"The Case of the Impoverished Sophisticate: Human Capital and Swedish Economic Growth before World War I,"* 229-232.

[32] Gunnar Broberg, *"The Swedish Museum of Natural History,"* 163-164.

[33] See Gunnar Broberg, *"The Swedish Museum of Natural History"* for details.

Since Sweden lacked the finances to equip and send out expeditions on a regular basis, it was not uncommon for Swedish scientists to go out on their own, often working with other nationalities as needed in order to achieve their research goals.[34] Although economics was one motivation for this style of research,[35] economics was only a partial motivation. Swedish "travelling scientists" tended to follow the example of Carl Linnaeus who believed that one purpose for scientific research was to "reveal the plan of creation" and come to understand the workings of God manifested in nature.[36] There is evidence that this view of science as a path to increased understanding of God was shared by Johan Gunnar Andersson.[37] There can be no doubt that at this time there was long history of lone Swedish researchers going abroad to do research in the natural sciences, and using diplomatic means to interact with other nationalities as they did so.[38]

Furthermore, although Sweden still had (and continues to have) a royal family and an extensive range of nobility, the population base and level of national wealth were (and continue to be) such so that the nobility could not be supported (either directly or as in many countries indirectly through systems such as land-rents and military titles) completely by the labor of the

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[34] Sorlin Sverker, *"Scientific Travel –the Linnean Tradition,"* 101.

[35] Sorlin Sverker, *"Scientific Travel –the Linnean Tradition,"* 114-115.

[36] Sorlin Sverker, *"Scientific Travel –the Linnean Tradition,"* 110-111. According to Gunnar Broberg, religious motivations were also inherent in some of the first attempts at creating museums and before the era when modern museums began (perhaps the eighteenth century) there were often exhibits of "natural marvels" in churches which were intended to glorify the works of God. Broberg is vague on the exact dates but states there is no in-depth history on this subject.

[37] Personal communication from Magnus Fiskejo.

[38] Sorlin Sverker, *"Scientific Travel –the Linnean Tradition,"* 118-119.

general population. The nobility had to work and compete for positions, and, therefore, although they maintained a position of some influence in the country, they did have an appreciation of the importance of hard work, competency in one's field and education.[39] As we will see later in this paper, the direct support of the King of Sweden at a key moment in the history of the digs was of great importance.

Sweden had prominent achievements in science and technology, which shows a general atmosphere of respect for intellectual and scientific pursuits.[40] There was also a long and continuous history of Swedish study and publishing on China and its culture that dated back to the early eighteenth century.[41] Swedish involvement with Arctic and Antarctic exploration may have had an influence as, like the Swedish travelling scientist tradition it was associated with, it helped prepare a community of scientifically trained men[42] who were open and experienced to the idea of doing research under dangerous and arduous conditions, such as might be found in warlord-era China.[43] (As will be discussed later, Johan Gunnar Andersson had participated in these polar expeditions.[44]) The existence of

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[39] Lars Sandberg, *"The Case of the Impoverished Sophisticate: Human Capital and Swedish Economic Growth before World War I,"* 241.

[40] Lars Sandberg. *"The Case of the Impoverished Sophisticate: Human Capital and Swedish Economic Growth before World War I,"* 232.

[41] See Torbjorn Loden, *"Swedish China Studies on the Threshold of the 21st Century,"* for a survey.

[42] I'm not aware of any women involved directly in these expeditions.

[43] See Tore Frangsmyr, *"Swedish Polar Exploration,"* for an overview of the history of Swedish polar exploration.

[44] Johan Gunnar Andersson published on these experiences as well.

For examples see Johan Gunnar Andersson's writings of 1902, 1903, 1904 and 1904.

modern Swedish banking and financial institutions could not have hurt and may have facilitated in such processes as transferring funds to China for the digs.[45]

The existence of a long-standing Swedish history and tradition of maintaining and collecting exhibits for museums through foreign expeditions,[46] could only have helped encourage a situation where the Swedes funded and worked in cooperation with the Chinese on archeological and paleontological digs, in return for receiving exhibits for Swedish museums.

Furthermore, during the period between the world wars, there was a great deal of activity within China featuring Swedish intellectuals. Swedish missionary, Erik Folke, was active in China intermittently from 1887-1920, and upon his return to Sweden translated Zhuang Zi and Lao Zi, in 1924 and 1927 respectively, and wrote an original work on Chinese thought in Swedish in 1922.[47] The Swede Sven Hedin embarked on a series of three Central Asian exploration missions, in 1893, 1899-1902, and, finally, from

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Of interest is mention that the 1902 expedition received partial support from the Argentine government, and the 1903 expedition received some support from the British Colonial Government in the Falklands. Although there is no indication that Andersson had a hand in negotiating these agreements, nevertheless as he was aware of them and wrote of them in passing, it seems likely that he had some knowledge of how the arrangements with these two governments were conducted and their importance. It seems quite likely that he took this knowledge to China with him, where he later was involved in creating direct diplomatic agreements with the Chinese government for the purpose of facilitating scientific research.

For a brief history of this expedition see "The expedition ship Antarctic."

[45] Lars Sandberg. *"The Case of the Impoverished Sophisticate: Human Capital and Swedish Economic Growth before World War I,"* 232.

[46] Gunnar Broberg, *"The Swedish Museum of Natural History,"* 155-157. Some particular exhibition pieces are mentioned, including a stuffed giraffe, the skulls of a Lap and a "New Zealander" (presumably a Maori), a frog with five legs and more.

[47] Torbjorn Loden *"Swedish China Studies on the Threshold of the 21st Century,"* 5.

1927-1935. The third of these involved collaboration among Swedes, Germans and Chinese. Co-incidentally, Hedin was a student of Ferdinand Von Richtofen, a German who was probably foremost among the prominent early geographers to study China.[48] The famous Sinologist Bernard Karlgren was active in studying Chinese linguistics. He had been studying Chinese since 1910, and did his first groundbreaking doctoral work in 1915 on Chinese phonetics. He became known as not just a linguist but also as a translator and added to the sense in Sweden that China might be a field in which to invest.[49] Finally, the King of Sweden, Gustav VI Adolf, had been collecting Chinese art since 1907.[50]

Undoubtedly there were many lesser Swedish scholars doing active work in China or on Sinological issues, not to mention Johan Gunnar Andersson, a man whose career will be more fully covered further on in this work.

Competition between Organizations and Institutions

Although there was a strong element of competitive nationalism driving the search for human origins, this competitive element also manifested itself in other ways. There was also competition between different organizations. For instance, Johan Gunnar Andersson, a Swedish geologist and mining adviser, would become active in the search for Peking Man as well as other geological and archeological efforts in China, was often motivated in his

[48] Torbjorn Loden , *"Swedish China Studies on the Threshold of the 21st Century,"* 7.

[49] Torbjorn Loden , *"Swedish China Studies on the Threshold of the 21st Century,"* 10-13., or Robert Ramsey, 126-134.

[50] Torbjorn Loden , *"Swedish China Studies on the Threshold of the 21st Century,"* 8.

choice of action by a desire to get to sites before Henry Fairfield Osborn, director of the American Museum of Natural History in New York, was able to send teams to excavate them. One source describes Andersson's "envy" of Osborn because the better-funded Osborn was able to use "American motor-cars" to race paleontologists across the Mongolian steppe to reach confirmed finds of dinosaur remains while Andersson's people were left behind, forced to use slower transportation such as horses, donkeys and camels, and thus unable to reach the finds before Osborn's people.[51] As we shall see throughout this paper, competition between organizations, particularly Andersson's and Osborn's, had an important effect on decision making at many key points in the history of the digs.

Part Two: Asia

Asia As The Birthplace Of Mankind.

Clearly many people from many organizations were eager to find evidence of human prehistory and anxious to dig for fossils. The key question was not if, but where, should they dig?

Charles Darwin had suggested that human origins might lie in Africa. By contrast, Alfred Russel Wallace, a co-synchronous developer of the theory of evolution, favored Asia as the continent that had spawned humanity.[52]

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[51] Magnus Fiskesjo and Chen Xingcan, *"China Before China,"* 34.

[52] Noel T. Boaz and Russell L. Ciochon, *"Dragon Bone Hill,"* 3.

In his classic essay, *"The Origin of the Human Races and the Antiquity of Man Deduced from the Theory of 'Natural Selection' (S93:1864),"* Wallace wrote, "If geologists can point out to us the most extensive land in the warmer regions of the Earth, which has not been submerged since eocene or miocene times, it is there that we may trace back the gradually decreasing brain of former races, till we come to a time when the body also begins materially to differ. Then we shall have reached the starting point of the human family."

In the 1920s, this view was held by many prominent scientists, including Henry Fairfield Osborn and Amadeus Grabau, both of whom will appear later in this paper multiple times.[53]

Although it is known today that Africa is the birthplace of humanity,[54] it is worth spending time on the logic and reasoning behind the belief that Asia was the birthplace of humanity.

In the 1920s, although paleontologists believed in human evolution, by modern standards, they were a bit confused over the time-frame of the process as well as its implications. Specifically, just as there was a widespread belief that the more civilized and advanced peoples of their era were more evolved than less civilized peoples,[55] there was also a belief that the more evolved a human group were, the more likely they were to produce a civilization. Therefore it was believed that the oldest, most evolved, kinds of people would naturally live in an area which had produced evidence of civilization or perhaps multiple civilizations.

Griffith Taylor, a respected geographer of the time whose interests included the relationship between race, racial characteristics and climate, wrote a lengthy work that, in part, dealt with this topic at length, building, elaborating and expanding upon pre-existing ideas about race, linguistics, evolution and the early origins of human civilization worldwide. He compared the spread of human races to a flow of lava from a volcano. Using this analogy, humanity originated at a central point, specifically central Asia, in

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[53] Jia Lanpo and Huang Weiwen, *"The Story of Peking Man,"* 18.

[54] For details see Stephen Olson, *"Mapping Human History,"* or Ian Tattersall and Jeffrey Schwartz, *"Extinct Humans*."

[55] See Stephen Jay Gould, *"The Mismeasure of Man"* for details.

the form of a specific race. As time went on other races evolved in the same central point. Because these races originated later, they were seen as more developed and more highly evolved than the earlier races that had evolved in the same spot. Through a combined process of natural drift, as well as pressure from the center, the earlier races spread outward over time reaching different continents. Within this theory, linguistics, evolution and ideas concerning "natural traits" of the various human races were all intertwined into one unified explanatory theory.[56]

It should be noted that Griffith Taylor (1880-1963) was not a fringe scholar. Among his accomplishments were participation in Scott's Antarctic Expedition of 1910-1912 as chief geologist, work with the Commonwealth Bureau of Meteorology, teaching at the University of Chicago, founding Australia's first geography department at the University of Sidney, and he was chosen from among many other candidates to found the University of Toronto's first Department of Geography in 1935. Born in London, he worked and lived for several years in Australia, yet according to one biographer Taylor was "Canada's Premier Geographer."[57] Clearly as odd or even offensive as some of his ideas might appear today, for instance the inclusion of period racism in the guise of scientific theory, the man and his works could not have been too far outside the mainstream of academic thought during the time when the Peking Man digs were being initiated.

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[56] See Griffith Taylor, *"The Evolution and Distribution of Race, Culture, and Language,"* for details. The "Lava Flow Theory" is covered on 104-106.

[57] See Donald Kerr, *"Geography at U of T: How it all began –University of Toronto, Department of Geography & Program in Planning, A Brief History,"* and Anonymous. *"Griffith Taylor, D.SC, B.E., B.A. (1880-1963)."*

Although not all scientists believed that mankind's origins lay in Asia, the idea was quite widespread and had many believers both within and outside scientific circles. For instance, there was a tradition that the Biblical Garden of Eden lay on the Asian continent. Some occultists, such as Helena Petrovna Blavatsky, the founder of Theosophy, also claimed Asia to be the birthplace of mankind.[58]

As an aside, although it might seem odd that Europeans and other Westerners of the time adopted a belief that seemed to put Europe on the periphery and which could at first glance be interpreted as indicating that Europeans were not as evolved as Central Asians during a period of global domination by Europe and European descended peoples, this issue was carefully considered.

For instance, there was widespread belief that at least some of the peoples of Europe had originated in Central Asia. For instance, the racialist notion of the Germanic peoples being "Aryan Race" (with all its ultimately tragic implications) held in part that the Germanic peoples had originated in ancient times in Northern India and thus would be, according to this theory, quite highly evolved.[59]

Additionally many, including Taylor Griffith, recognized that the historical events of the previous 500 years, the period during which European civilization had risen to global dominance, could not be explained by evolution alone.[60]

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[58] Brian Regal, "*Human Evolution –A Guide to the Debates,"* 76-77.

[59] Brian Regal, "*Human Evolution –A Guide to the Debates*," 72-73.

[60] Taylor Griffith, *"The Evolution and Distribution of Race, Culture, and Language,"* 105.

Furthermore, although race and degree of civilization were linked, such a link was believed to be one of many factors, including culture, climate and access to resources, that influenced the development and standing of a people and culture.

To summarize, in the early twentieth century there was a widespread recognition that mankind, like other living things, had evolved from simpler beings that had existed in prehistoric times. There were, however, no real details about how and where mankind had evolved or from what species. Not only was there intellectual and scientific curiosity surrounding this issue, but there was also widespread sentiment that finding evidence that would help solve this mystery would bring prestige to the organization and the nation that uncovered it. There were also, based on the knowledge of the day, logical reasons to suspect that Asia might be the home to mankind's earliest ancestors and the archetypal entity known as "the missing link" that allegedly marked the point where man and apes had begun to split.[61] Therefore, with many eager and motivated to dig for human remains in Asia, the question on the minds of many Western paleontologists was not whether to dig in Asia, but where in Asia, and, furthermore, how to arrange the financing and logistics of the digs?

[61] As an aside, the notion of the "missing link" was predicated on a much more linear picture of evolution than is widely used today. For instance, it is arguably predicated on the notion that a human is superior to an ape and that therefore an ape might evolve "upward" into a human. Today, in fact, few biologists would argue that a human is superior to an ape (or vice-versa). Apes and humans are different species. Arguing the over-all superiority of one of the other would be a bit like the classic metaphor about comparing apples and oranges.

Pre-Modern, Traditional Chinese Fossil Collecting.

To provide background and crucial context for aspects of the discovery of the Peking Man, it is necessary to first briefly cover Chinese traditions concerning fossil hunting, fossil collecting, fossil beliefs and the uses and marketing of fossil materials in traditional China.

Chinese civilization had a long awareness of fossil plants and animals. In her work, The First Fossil Hunters, Adrienne Mayor discusses awareness, misinterpretations and beliefs surrounding fossils and large pre-historic animal remains among ancient peoples.[62] The Chinese, she says, are first documented to have become aware of fossils in the second century B.C. when "dragon bones" were found during the digging of a canal, which was therefore named "the Dragon-Head Waterway."[63]

Fossils, like many exotic and difficult to obtain materials, were incorporated into some schools of traditional Chinese medical belief. Fossils seem to have been first prescribed as medicine as early as 100 A.D.[64] and their use is described in full in the Shennong Bencao Jing, a classic Chinese medicinal work that dates from that time.[65]

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[62] Among the fascinating subjects that Adrienne Mayor discusses in her book are the possibilities that many of the beliefs among ancient peoples surrounding such mythological creatures as giants, griffins and Cyclops are possible misinterpretations of discoveries of large pre-historic creatures. For instance, if perceived as a biped, the bones of a mammoth could be seen as the remains of a large giant, and the large opening for the trunk in the center of the skull, could have been misinterpreted as a large single eye-hole. She also argues that the bones of beaked dinosaurs such as the protoceratops could have been misinterpreted as those of giant four legged birds such as griffins.

[63] Adrienne Mayor, "*The First Fossil Hunters –Paleontology in Greek and Roman Times,"* 38.

[64] Mark Norell, "*Unearthing the Dragon –The Great Feathered Dinosaur Discovery,"* 147.

[65] As is common with many early works on Chinese medicinal theory, the authorship of the volume was attributed to Shen-nong, a mythological being, and thus people of the time believed the book to be much older than it actually was. See Paul Unschuld, *"Medicine in China –A History of Pharmaceutics,"* 11-14 for a brief introduction to the volume.

Although there was much speculation among pre-modern Chinese scholars as to what the origin of fossils might be as well as folklore about their traits,[66] they were commonly referred to as "dragon bones" or "dragon teeth" when sold in pharmacies. There was a great demand for these products and they were sold widely throughout Chinese communities in China and abroad. In fact, Mayor states that in 1885, according to imperial customs records, twenty tons of fossils were exported out of China. As it seems quite unlikely that there was much widespread demand for Chinese fossils elsewhere aside for their use as medicine, presumably this demand was for medicinal use by overseas Chinese.[67]

During the period covered by this paper, the central market for *materia medica*, fossils included, was in Anguo County in Hebei. This market had existed for at least two and possibly as many as five centuries and served the entire nation. Although there were several rival markets in China up until the eighteenth century, at that time the Anguo fair became increasingly important. Because of this, rival fairs became less important until eventually the Anguo fair became the national medicine fair.

Interestingly, the Anguo fair achieved prominence because of the presence of an important temple to a deity called Yao Wang, the Medicine King. Even as late as 1932, persons were transporting at least some

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[66] Joseph Needham and Ling Wang, "*Science and Civilisation in China, Volume 3: Mathematics and the Sciences of the Heavens and the Earth,"* 612-623.

On 615-616 Needham includes an amusing 5th Century A.D. report of "stone swallows," or fossils of various kinds including shellfish, that were said to not just look like small birds but to be able to fly around during thunderstorms. By the 12th century A.D. Chinese scholars had researched the matter and determined that such fossils were, in fact, unable to fly.

[67] Adrienne Mayor, "*The First Fossil Hunters –Paleontology in Greek and Roman Times,"* 39.

medicinal herbs from their places of origin to Anguo and then back again so that they could be blessed in this temple. Although one might at first suspect Anguo's rise to prominence might have also been due to other factors, perhaps, for example, centralized transportation networks, this does not seem to have been the case.[68]

In addition to herbs, fossils were also among the materia medica that were bought and sold at the Anguo market. The market did business only at certain times of the year, and people would gather from great distances for this market. Some came for the market directly. These included buyers and sellers of medical materials, as well as persons such as laborers and prostitutes who came seeking employment at the fair. Printers, potters, wood carvers, performing artists, painters, incense dealers, inn keepers, temple personnel and others found the fair an important source of employment. It drew traders from almost every economic region in China. The medicine fair was served by a network of labor brokers and associations, traditional banking institutions, and the local chamber of commerce in Anguo County assessed and collected taxes, maintained order and settled disputes, and kept competition among the regional associations under control while they were attending the fair.[69]

The fair occurred during two three-month cycles that lasted from the third through fifth month and the ninth through eleventh month of the traditional Chinese calendar.[70]

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[68] Susan Mann Jones, *"Trade, Transport and Taxes: the Decline of a National Medicine Fair in Republican China,"* 122-123.

[69] Susan Mann Jones, *"Trade, Transport and Taxes: the Decline of a National Medicine Fair in Republican China,"* 119-122.

[70] Susan Mann Jones, *"Trade, Transport and Taxes: the Decline of a National Medicine Fair in Republican China,"* 112-113.

In at least some cases, if "dragon bones" were not purchased at this market, there was great suspicion that there were counterfeit and not nearly as valuable.[71] Curiously, the Chinese are known to have produced counterfeit fossils, in particular, counterfeit fossil fish, as far back as the twelfth century A.D.[72]

In the medicine shops around China that sold such fossils, however, fossils were available for sale year round. Andersson reports that in cities such as Shanghai there were areas where such stores would cluster.[73]

Fossils were used in various ways in traditional Chinese medicine. Needham states that in the eighteenth century fossils were mixed with vinegar. He speculates that such fossils may have provided people with sufficient calcium or lime to correct deficiencies that might be responsible for health problems.[74] "Dragon bone" was used in compounds mixed with other materia medica, particularly oyster shell, cinnamon and bupleurum.[75] Fossils were used in both their raw state and in a "calcined" or "slow baked" form.

She has also written upon the subject under the name Susan Mann, but in less detail, in *"Brokers as Entrepeneurs in Presocialist China,"* in Comparative Studies in Society and History. Vol. 26, No. 4 (Oct., 1984), 618.

[71] Jia Lanpo and Huang Weiwen, *"The Story of Peking Man,"* 12.

[72] Adrienne Mayor, "*The First Fossil Hunters –Paleontology in Greek and Roman Times,"* 172.

[73] See footnote 81.

[74] Joseph Needham and Ling Wang, "*Science and Civilisation in China, Volume 3: Mathematics and the Sciences of the Heavens and the Earth,"* 616-617.

[75] See Bhuti Dharmananda, *"Dragon's Bones and Teeth."*

Note that *bupleurum* or *bupleurum falcatum* is a perennial herb that grow in north China and elsewhere. See John D. Keys, "*Chinese Herbs –Their Botany, Chemistry and Pharmacodynamics,"* 197-198 for details.

They were (and often still are) believed to be useful as a sedative and for treating convulsions, sleep disorders, and diarrhea, as well as to promote tissue regeneration.[76]

If we ask whether the existence of a widespread, indigenous Chinese network and market for the collecting, sale and then ultimately the destruction and consumption by humans of fossils has been harmful or helpful to the development and present state of paleontology in China today and in modern times, the answers are clearly mixed.

On the positive side, the fact that fossils had a monetary value encouraged collection and awareness of how to find them among the common people of China. Even today in China, Chinese paleontologists know that one way to find fossil deposits is to approach rural villagers and ask about the whereabouts of "dragon bones."[77]

Furthermore, the fact that fossils were being collected and sold openly often made it much easier for foreign scientists to acquire fossils. For instance, the first sample of a Peking Man fossil, a tooth, was collected by Chinese for this purpose and sold to Haberer, a German, in such a fossil shop at the turn of the century. Therefore, these markets definitely helped lead to the discovery of Peking Man. And Haberer was not alone in the practice of purchasing fossils from medicine shops. In the 1928 English

[76] See Bhuti Dharmananda, *"Dragon's Bones and Teeth,"* for an introduction to the exact uses of fossils in traditional Chinese medicine. Because traditional Chinese medical belief uses a radically different view of the human body from that which is known to actually exist, if one wishes to really understand the use of any traditional Chinese materia medica one needs to describe the use in terms of traditional Chinese metaphysics. Thus it could be said that, according to Dharamananda one use of "dragon bone" is to "settle rising yang." However to explain such terminology would require an extreme digression and therefore this section on the uses of "dragon bone" in Chinese medicine is merely a rough introduction.

[77] Jia Lanpo and Huang Weiwen, *"The Story of Peking Man,"* 6-7.

edition of his work, The Dragon and the Foreign Devils, Johan Gunnar Andersson tells of a trip to Shanghai in 1925 which included visits to medicine shops that sold fossils "in the hope of thus getting knowledge of some new type or new locality for such discoveries."[78]

And Andersson and Haberer were not alone in their practice of searching for unique fossil specimens in Chinese fossil shops. Ferdinand Von Richtofen, the late nineteenth century German geographer who authored a groundbreaking work on Chinese geography, purchased fossils in Chinese medicine shops as early as the 1860's.[79] As late as 1936 and probably much later, prominent paleontologists such as Teilhard de Chardin, Pei Wenzhong and G.H.R. Von Koenigswald were all expanding their fossil collections through visits to traditional Chinese pharmacies.[80]

As an aside that ties in with the theme of this thesis, during this trip Andersson and his Chinese companions discovered that the Chinese medicine shop owners had decided to unite amongst themselves and made a decision not to sell any more fossils to foreigners.[81]

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[78] Johan Gunnar Andersson. *"The Dragon and the Foreign Devils,"* 268 for source of quote. See 267-269 for an interesting story on his dealings with such firms. More details of this incident are described in note 80.

[79] Paul Copper and Chen Yuanren, *"Invetina, a New Middle Devonian Atrypid Brachiopod Genus from South China,"* 251, 254.

[80] G.H.R. Von Koenigswald, 70, for information on the purchases. On 72, this same source states that in 1936, the first known tooth of a large non-human primate species called Gigantopithecus were purchased in a traditional Chinese pharmacy.

[81] Andersson tells the story is told in full in Johan Gunnar Andersson, *"The Dragon and the Foreign Devils,"* 268-269.

The relevant passage is as follows:

"The great medicinal firms in Shanghai are all on one street, where they stand close together. We went from shop to shop, asking for lung ku [dragon bones], but were everywhere met by the same short and uncomprehending answer. Some after a time said

But the presence of Chinese fossil markets was certainly not an entirely positive thing for Western paleontologists.

During the digs that discovered the remains of Java Man in the 1890s, the presence of these markets was a hindrance. During this expedition, much of the actual digging for fossils was performed by convict laborers provided by the Dutch colonial administration. These convicts occasionally kept fossils for themselves, with the intent of reselling them later to Chinese fossil traders for personal gain, rather than turn them over for inspection, selection, and scientific analysis.[82] Therefore the presence of a second, non-scientific market for fossils as medicine in China has historically resulted in the diversion of fossil specimens from scientific study.

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they did not have the article, but some, as we realized only too well, gave us to know substantially that they did not wish to do business with us.

"I asked Yao what this ungraciousness meant, but he could not give me a satisfactory explanation. After having failed in four places, we came into a shop whose owner was a remarkably dignified old gentleman. With him I did not wish to expose myself to another failure, so I took out my Chinese visiting card and told Yao to explain to him that we were from Peking and that I was in the service of the Chinese Government.

"The old gentleman looked carefully at my card. He then turned to a couple of his assistants and talked to them in a low voice. Finally he opened the door to a private room and with the greatest politeness bade me come in. I was put in the seat of honor and offered tea and cigarettes. Then the old merchant began to talk.

"'I greatly regret,' he said, 'that a mistake has been made here. We had messages from the other shops that a foreigner had come who wished to see lung ku. We medicine dealers have very little contact with foreigners, and we Chinese here in Shanghai do not like the way the foreigners treat us. We of the medical trade therefore agreed that we should tray as much as possible to have nothing to do with foreigners, and therefore you were told that we had no lung ku.

"'I now realize that Mr. An (my Chinese name) is from Peking, that he is in the service of the Chinese Government and that his behavior toward the Chinese is different from that which is customary among the foreigners here in Shanghai.

"'On behalf of all the medicine dealers I regret what has occurred. All the lung ku we have on this street we shall shortly bring into this room, so that Mr. An may see it without needing to go around to the other shops.'"

"Sure enough, in a few minutes came one basket after another full of fossil bones and teeth, and all I had to do was to choose what I wanted to buy.

[82] Richard Milner*, "The Encyclopedia of Evolution –Humanity's Search for its Origins,"* 147.

Although in today's China, the illegal collection and smuggling of fossils is done primarily to satisfy a market among collectors[83] who most likely have at least some appreciation for the fossil's scientific value, even if they do not deal with this issue in a societally responsible manner, there is still a parallel market for illegally obtained fossils for use as traditional Chinese medicine.[84]

A second negative effect of the Chinese medicinal fossil market is the destruction of specimens. This destruction takes place in two different ways. First, at the end of the process as fossil specimens are ground, dissolved, and then consumed in a medicinal compound they are lost forever. Yet fossil specimens are also destroyed during the collection process. When collected for medicinal purposes, fossils are usually "harvested" by being broken into small pieces which facilitates both the collection and transportation of the product which is then often sold by weight. In some cases, large fossil

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[83] For instance see Rex Dalton, *"Fake bird fossil highlights the problem of illegal trading"* and *"Feathers fly as China cracks down on illegal fossil sales."*

[84] Mark Norell, –personal communication by e-mail dated January 26, 2006.

The relevant passage from the e-mail is as follows:

"As far as the trade today, many specimens are in fact bought by private collectors. In the past this was primarily in the east, but with the development of the Asian economy now many are acquired by Asian collectors in Singapore, China, Korea, and Hong Kong. Nevertheless there is still an active trade in fossils for the medicinal market. They are found in all traditional pharmacies. I have even seen them for sale in Chinatown. Even some of my own sites in Mongolia have been raided for Dragon bones. I know this because of the way the fossils were excavated by breaking them up and stuffing them into bags. Local nomads tell of Chinese traders who buy this stuff by the kilogram."

In his book on 147 Norell states that most of the fossils found and sold for use as medicine today come from Shanxi in Central China.

specimens are immediately broken into smaller pieces as this apparently increases their resale value in at least some cases.[85]

As is widely known, the Peking Man specimens collected in the 1920s and 1930s disappeared during the Second World War. Their fate remains unknown and the missing specimens have never been found or recovered, despite widespread search efforts by both Chinese and foreign investigators. One theory, one theory among many, as to what might have happened to these scientifically valuable, lost specimens is that they may have somehow wound up in the hands of Chinese and, interested mainly in their potential as *materia medica,* then ground them up and used them as medicine.[86]

China And Paleontology In The Early Twentieth Century.

In the early years of the twentieth century, especially after the demise of the last imperial dynasty in 1911, China was perceived as many things. Although the image of China as a politically fragmented, populous nation trying to find stability and modernize without losing all sense of tradition and identity tended to overshadow others, this was only part of the whole. In some places, particularly in paleontological circles worldwide, China was perceived as a possible site for the birth of the human race.

There were clues that China might be a good place. Among these clues was a single tooth found by Karl Haberer and identified as a primate or perhaps hominid by Max Schlosser near the turn of the century.

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[85] Jia Lanpo and Huang Weiwen, *"The Story of Peking Man,"* 6 for breaking up of specimens.

[86] See Noel T. Boaz and Russell L. Ciochon, *"Dragon Bone Hill,"* 51. On 39 of the same work there is a discussion of the misperception among some of the bones handlers, particularly Henry S. Houghton of the Peking Union Medical College that the Peking Man bones lacked financial value.

Part Three: The Digs Begin and Science in Colonialized China

Schlosser, Haberer, And The First Tooth.

The first evidence of pre-human hominids in China was found around the turn of the century. In 1899, a German physician named Karl Albert Haberer traveled to China to do research. Although one area of his research was comparative physical anthropology and craniometry of modern humans, he also wished to dig for fossils and research prehistoric lifeforms.[87]

His original plan included exploring the western countryside of China searching for fossils, but the political unrest from the Boxer Rebellion interfered. Therefore, instead of searching for fossils on his own, he purchased fossils from traditional Chinese pharmacies in Shanghai, Beijing and elsewhere.

Through purchase, Haberer built up a large collection of fossils, which he turned over to a Munich museum curator named Max Schlosser. Schlosser then set about categorizing and identifying the fossils.

Schlosser and Haberer were intrigued, in particular, by a single unaccompanied tooth. In 1903, Max Schlosser thought the tooth might belong to an unknown primate or even a hominid. The tooth, which was later identified as a third upper left molar,[88] is now known to belong to Peking Man. Although it could be deduced that the tooth originated somewhere in North China,[89] otherwise its origin and provenance were unknown.[90]

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[87] Jia Lanpo and Huang Weiwen, *"The Story of Peking Man,"* 8.

[88] Jia Lanpo and Huang Weiwen, *"The Story of Peking Man,"* 10, 26.

[89] Jia Lanpo and Huang Weiwen, *"The Story of Peking Man,"* 9.

[90] As an aside, when studying the history of paleontology in China (or elsewhere) at times it seems that an astonishingly high number of fossil teeth figure prominently in the narrative.

As for Haberer's tooth in particular, regardless of who was responsible for finding the tooth in question, unfortunately, its significance

Illustration 1. Haberer in China at the turn of the century. Taken from Schadel under Skeletteile Aus Peking

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This is not merely coincidental. Different parts of animals have different rates of fossilization and the higher the mineral content of a particular piece, the greater its chances of fossilization. Since teeth contain over 90% mineral content, their rate of fossilization is particularly high when compared to other body parts.

See Jeffrey McKee, Frank E. Poirer, and W. Scott McGraw, *"Human Evolution,"* 31, for details.

was overshadowed by the large number of other fossils that had been collected and remained to be sorted and identified. By 1914, using these fossils, Schlosser had identified about ninety species of mammals from the bones that Haberer had purchased and collected.[91]

Although Haberer's efforts can be seen as an interesting prologue to the later Peking Man digs of the 1920s, to prepare for later discussion it's first necessary to touch upon the following; first, the relationship between science and colonialism, second, the sorts of interactions that were common among the various scientists and scientifically oriented colonialists in China and elsewhere, third, the sorts of relationships that were typical between foreign scientists doing research in China and Chinese citizens, and, finally, what sort of differences or variations in this situation, if any, were likely to be present for a German of Haberer's time in China.

1. science and colonialism

Scientific research and zoological research in particular were often an important part of colonial societies and colonial business enterprises. Science was perceived as both a means to identify exploitable resources as well as to identify the best means to achieve profit from exploiting these resources. Not only were the native peoples and products of a nation generally seen as a utilizable resource, but since colonialist powers generally controlled the resources of multiple areas, they were often able to effectively utilize the peoples and resources of one area in a different location in order to achieve maximum perceived gain elsewhere.

[91] Jia Lanpo and Huang Weiwen, *"The Story of Peking Man,"* 10.

To offer one example, the British not only sold Indian grown opium in China, but they also deployed Indian troops in China and elsewhere. Similarly species of rubber trees native to the Amazon region were transplanted and grown commercially on plantations in Sri Lanka, India and Malaysia that were worked by a mixture of native and imported labor, including, particularly in Malaysia, contracted Chinese coolies.[92]

Other scientific endeavors were intended to directly improve the health and well-being of the colonies. Meteorological stations were a common colonial scientific endeavor and were often a great aid to the safety and well-being of both the colonies and colonial shipping.[93] Since the threat of "exotic" diseases was virtually endemic among colonial officials and personnel, research into medical means to prevent or cure such threats was an important part of the relationship between science and colonialism.[94]

Among colonial era sciences, paleontology, at first glance, might not seem to offer immediate economic benefit to a colonial enterprise. In fact, paleontology did provide important benefits to colonial governments and institutions.

First, paleontology is inter-related with geology which is in turn inter-related with geography. Since at least the eighteenth century in England,

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[92] Lucile H. Brockway, "*Science and Colonial Expansion –The Role of the British Royal Botanic Gardens,"* 141-165.

[93] For instance, from 1898 onwards the German navy maintained a meteorological station in Qingdao.

See Lewis Pyenson, "*Cultural Imperialism and Exact Sciences, -German Expansion Overseas 1900-1930,"* 262.

[94] For one example see Lucile H. Brockway, "*Science and Colonial Expansion –The Role of the British Royal Botanic Gardens,"* 103-139, for details on the relationship between British colonial era botany, the problem of malaria and the development of quinine.

there has been an attempt to scientifically use different kinds of fossils as markers for identifying both actual and potential resources in mining.[95] Therefore it is considered beneficial for mining engineers to have some awareness of different kinds of fossils. As colonial enterprises were often quite interested in geographical studies of the areas which they controlled, and as a prime motivation behind these studies was to identify exploitable mineral resources, and as in turn the identification of fossils was an aid in identifying mineral resources, paleontological studies were often an early part of colonial surveys of potentially exploitable areas.

Although it's important to note that Andersson was a mining adviser to the Chinese government, and therefore he was not working for a colonialist power, but instead a post-colonial Chinese government, the same networks were still in place in China and he still followed and practiced many of the procedures of his predecessors. Therefore, to understand the ways in which Andersson and his contemporaries did their field work, it is good to understand the methods of their colonial-era predecessors.

For instance, Ferdinand Von Richtofen was a prominent German geographer of the late nineteenth century whose groundbreaking research and publications of China (and elsewhere) were influential for over half a century.[96] During his surveys in China, Richtofen showed an interest in Chinese paleontology.[97]

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[95] Michael Freeman, *"Victorians and the Prehistoric –Tracks to a Lost World,"* 32, 34, and 38.

[96] Eugen Wirth*, "Overseas Exploratory Fieldwork – A Specific Tradition in German Geography,"* 8-9.

In addition to China, Ferdinand Von Richtofen did geographical research in many locations including Ceylon (Sri Lanka), Java, the Philippines, Siam (Thailand), and Indo-China (Vietnam, Cambodia and Laos), as well as Colorado, California and elsewhere in the United States. He was the author of an influential, multi-volume text on Chinese geography

Secondly, colonies and colonial enterprises were often a great source of prestige and held great symbolic importance for colonialist powers. Partially because of this, there was a constant demand for museum exhibits among colonial powers. Paleontological displays, particularly those of large pre-historic animals or newly discovered and particularly interesting species, were constantly in demand.[98]

As many of the endeavors described in this paper were affiliated, sponsored or funded by various Western museums, they need to be seen in this context. As the dig for the Peking Man was often seen as a search for the particularly elusive and sought after specimen known as the so-called "missing link," and as finding the missing link would have brought great fame and fortune to any museum involved in its discovery, the role of Western museums in the history of late nineteenth and early twentieth century paleontology in China needs to be kept in mind.

As an aside, museums were important in the development of not just paleontology in China, but also archeology in China. Some date the beginning of modern Chinese archeology from the year 1920 when two teams, one from the Historical Museum in Peking (Beijing) and the other from the Chihli Provincial Museum in Tientsin (Tianjin), excavated the

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entitled, "China. Ergebnisse eigener Reisen" ("China. The Results of My Personal Travels,") which consisted of five text and two atlas volumes which were released during the period from 1877-1912.

[97] Paul Copper and Chen Yuanren, *"Invetina, a New Middle Devonian Atrypid Brachiopod Genus from South China,"* 254.

[98] Michael Freeman, "*Victorians and the Prehistoric –Tracks to a Lost World,"* 229-231, 235-237, 243-244, 248-249, 252-253.

ancient city of Chu-lu Xian, which had been submerged under mud in 1108A.D. when the Yellow River shifted course.[99]

Thirdly, during the time under discussion, the late nineteenth to the early twentieth century, there was a common belief that the different races of mankind were significantly unequal in fundamental ways. Some races and ethnicities, for instance, were seen as more highly evolved than others. Since colonial powers often employed several different races and kinds of people in different, unequal capacity, there was an occasional belief that by studying the different varieties of mankind as well as their origins, one might learn useful information that would lead to a better understanding of how to employ or utilize various kinds of people. Even if the validity of such a belief was questionable at best, offensive and destructive at worst, the belief provided justification for the unequal nature of many racially unequal colonial enterprises. Therefore if scientific appearing evidence could be provided that seemed to justify the inequitable racial policies of colonial governments, then such scientific appearing evidence would be of great value to a colonial power as it would provide moral justification for unequal racial policies.[100]

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[99] L. Carrington Goodrich, *"Archeology in China: The First Decades,"* 7.

[100] There are several components to this statement and it's simplest to cite the components separately.

First, Stephen Jay Gould provides a detailed history of the belief that it was possible to justify racial inequality through scientific appearing studies.

Secondly, Frank Dikotter provides a history of how these beliefs affected China.

Thirdly, as for the alleged moral justification of racially unequal colonial policies although there are many examples, one might seen the following sources.:

George Steinmetz discusses and compares the ways in which racial discourse affected German colonial policies in Samoa, South West Africa and China and the ways in which racial policies corresponded with the variety of discourse offered.

2. Scientific networks among Scholars in Colonial Nations

Since the mid-nineteenth century, extensive, largely informal inter-personal networks of persons, primarily Europeans, who were interested in science and scientific research existed in China and throughout the areas in which colonialist powers operated. Through these informal networks, individuals doing scientific research could discuss conditions and methods of operation in the regions where they did research while exchanging scientific information among themselves and with their colleagues at home and abroad. These informal scientific networks were often imbedded in other formalized institutions such as the British governmental agencies active in China, notably the British Consular Service, or various Protestant missionary organizations. Scientific research and the exchange of scientific findings were also popular within the Chinese Maritime Customs, a Chinese governmental agency that was largely staffed and controlled by the British, although it employed many other Westerners in key positions as well. The educational levels of these part time scientists varied widely.

Although Fan states that these networks were often nationalist in character,[101] in many cases these networks and the informal sharing of information, actually, crossed ethnic and national lines.

Lucille H. Brockway, "*Science and Colonial Expansion –The Role of the British Royal Botanic Gardens,"* 23-26 discusses, and then debunks, the British perception that their colonial policies in India were "developing" the country and beneficial to the common Indian.

Clearly the relationship between racial perceptions and colonial polices is a large and much discussed issue, and lies well outside the scope of this paper.

[101] See Fan Fa-ti, *"Victorian Naturalists in China: Science and informal empire,"* 11.

Earlier, when Alfred Russel Wallace, the man who independently developed the theory of evolution, did field work in Malaya (Malaysia) in the 1850's he was often dependent on informal networks of Europeans for information on acquiring even the basic necessities on how to survive in even the "civilized" areas where he traveled.

As Camerini wrote while describing Wallace's method of doing fieldwork:

> The bits of lattice were pieced together by a brother-in-law here, a letter of introduction there, a Dane showing him a path, a German giving him a meal, a Brit lending him a servant, or land, or material to help him build a temporary abode, and a Dutchman introducing him to a rajah.[102]

Therefore, in at least some places and times, not only was involvement in colonial information exchange networks a necessity of life for those doing business, research, or missionary work in colonialized regions, but these information networks frequently crossed national lines.

Furthermore, not only did these informal social networks often cross national lines, but they also often crossed class lines and the relationships that emerged among Europeans and Westerners in colonialized regions often had a character quite different from that possible in their home countries.

Camerini describes this as well:

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[102] Jane R. Camerini, *"Wallace in the Field,"* 50.

> Wallace also benefited from the social fluidity of colonial society. The class distinctions among men of various professions –merchants, clergy, government, industry and medicine—were altered in the transfer of European society to the colonies. In a context in which the boundary between European and Other was enhanced, the boundaries between the middle and upper classes were more blurred and forgiving. Wallace was able, like many a colonial fortune seeker, to move far more readily through social boundaries in this dislocated European society than he would have been had he remained in Britain. The quality of these interactions –the domestic openness, the extending of favors, guidance, and privilege, the intellectual exchanges—suggested that the status of "gentleman" was conferred according to local, colonial conventions. Many such gentleman colonials, especially doctors, welcomed the company of a man of science. [103]

As we can see from this quote, not only was there great social interaction among Europeans and other Westerners in colonialized regions, but these interactions had a social fluidity that often crossed class lines and the perceived social boundaries of the home country. Furthermore, as one explicit medium of social interaction was the exchange of scientific knowledge, there was a definite desire among many scientists as well as

[103] Jane R. Camerini, *"Wallace in the Field,"* 50-51.

non-scientists who worked, lived or traveled in colonialized regions to meet and exchange scientific information. These exchanges crossed many lines, including class lines as well as the division between professionals and non-professionals.

Although the quotes above describe the situation in Malaya (Malaysia) in the late 1850s, and conditions in China fifty years later could have been different, it seems unlikely that the differences were considerable. Examination of reports of turn of the century and Republican-era scientific research efforts in China contain frequent reports of cross-national cooperation. Although it is more difficult to document instances of cross-class interactions among colonialist personnel that would not have occurred in the home countries, such interactions undoubtedly took place.[104]

In some cases, cross nationality exchange of knowledge was purposely sought out. For instance, before Bailey Willis, an American, did his 1903-1904 geological and paleontological research in China with the goal of discovering fossil trilobites, he and Eliot Blackwelder, a paleontologist and stratigrapher from the University of Chicago, consulted with both Ferdinand Von Richtofen, the famous German geographer who they visited in Berlin, and Vladimir Afans'evich Obruchev, a Russian

[104] However, one might see Claire Taschidjian's novel, *"The Peking Man is Missing."* Although the work is fiction, Claire Taschidjian was an assistant to Weidenrach and an employee of the Peking Union Medical College during the period when the Peking Man bones disappeared. She draws on her experiences extensively modeling fictional characters and events closely on the reality she experienced. Among the subplots in the early portion of the novel is a romance between a Swiss missionaries' adult daughter and an American Marine non-commissioned officer. Because the marine is a Vermont farmer's son with no college education and the Swiss missionaries daughter has a college education and normally travels in higher social circles than he does, although while they discuss marriage they both question the future of their relationship, while trying to enjoy their time together in Beijing.

These characters are introduced in chapter two of the novel.

geologist and geographer who had done extensive work in China, who they then visited in Moscow while en route to China on the Trans-Siberian Railway.[105]

The later 1920s and 1930s era search for the Peking Man remains involved, at various points, persons from Sweden, Canada, Germany, France, and the United States, (as well as, of course, China).

While travelling abroad not only did intellectuals and scientists tend to gather and network to achieve common goals, but they also gathered for social purposes as well.

As one source reports on conditions in Peiping (Beijing) in the 1930s:

> But even though no longer the capital, the imperial city remained the intellectual heart of the country. For a decade it continued to attract the leading scientists, writers and thinkers of the world. As many nationalities were represented in the polyglot scientific group to be found in the late twenties and early thirties as at any time in the city's long history. The Academica Sinica, the Peking Union Medical College, the Chinese Geological Survey, and the various educational and missionary institutions acted as magnets to attract a steady stream of outstanding specialists from other lands. Away from their homes, such men were glad to lecture or chat informally and we heard much that we would never have learned otherwise. Our guests of the early twenties included Bertrand

[105] David Oldroyd and Yang Jing-yi, *"Bailey Willis (1857-1949): Geological Theorizing and Chinese Geology,"* 5.

Russell, Rabindranath Tagore, John Dewey, Sven Hedin and dozens of others.[106]

From this quote we get some picture of the intellectual situation in Beijing during the 1920s and 1930s. Not only was there much social interaction and intellectual exchange between resident foreign intellectuals, but there was also much social interaction and intellectual exchange between resident intellectuals and visiting intellectuals. Furthermore, this social interaction crossed national lines.

It should not be assumed that such intellectual and social exchange was necessarily kept on an informal and non-professional basis. At times visiting intellectuals were informally recruited to assist with professional research efforts while abroad. This was definitely the case among the individuals involved with the Peking Man digs.

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[106] George B. Barbour, "*In the Field with Teilhard De Chardin,"* 41-42.

Bertrand Russell (1872-1970), was a British philosopher and mathematician who went on to win a Nobel Prize for literature in 1950. See Anonymous. *"Bertrand Russell—Biography,"* no date, http://nobelprize.org/literature/laureates/1950/russel-bio.html (accessed March 1, 2006).

Rabindranath Tagore, (1861-1941) was an Indian poet and writer who won the nobel prize for literature in 1913. See Anonymous. *"Rabindranath Tagore—Biography,"* no date, http://nobelprize.org/literature/laureates/1913/tagore-bio.html (accessed March 1, 2006)

Thomas Dewey, (1902-1971) was an American politician made his reputation prosecuting organized crime in New York City. He went on to become governor of New York State in 1941 and was the Republican Presidential Candidate for President in 1948, although he lost to Truman . See Anonymous. *"Thomas Dewey (1902-1971),"* no date, http://www.nps.gov/elro/glossary/dewey-thomas.htm (accessed March 1, 2006).

Sven Hedin was a Swedish explorer and geographer who did much work in Central Asia and some in China. He was a student of Ferdinand Von Richtofen . See Waugh, Daniel C. *"A Sven Hedin Bibliography."* Last Updated January 8, 2001. http://www.silk-road.com/bibliography/hedinb3.html (accessed February 10, 2006).

For instance, George B. Barbour wrote:

> In addition to the permanent members of the staff, in connection with special problems, Black enlisted the cooperation of any other available specialist who could be pried loose from his regular occupation. As a result, I found myself with the title of Visiting Physiographer to the Rockefeller Foundation and charged with the task of linking the recognizable stages in the development of the North China landscape with the conditions under which the [Zhoukoudian] cave deposit came into existence. [107]

From this quote we can see that the existence of wide-spread, informally organized, social networks within which knowledge was exchanged, not only affected the social climate and preparations for scientific research in colonialized regions, but that such networks often had a direct effect on the recruitment of individuals and expertise in ways which directly affected such operations.

Haberer's research focused on "physical anthropology"[108] and, of course, paleontology. Undoubtedly, while travelling in China and doing his research, he too relied on pre-existing, informal networks of foreigners interested in scientific research in China.

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[107] George B. Barbour, "*In the Field with Teilhard De Chardin,"* 48.

[108] Haberer's book, *"Schadel und Skeletteile aus Peking,"* focuses on differences in measurements between the skulls and other human bones comparing samples from many ethnic groups. Many of these skulls were collected from Chinese who had died in the Boxer Uprising, adding another morally ambivalent aspect, tinged with Imperialist overtones, to Haberer's endeavor.

In the next section, we will discuss the nature of German activities in China and other colonialized regions and how differences in German conditions might have affected the way in which Haberer expedition and research might have been affected by them.

3. Germans in particular

During the late nineteenth and early twentieth centuries, the Germans, like most prominent European nations (as well as the United States and Japan), had an interest in developing overseas colonies. There were two primary motivations for the German interest in developing colonies, although these were often incompatible. The first was the "emigrationist" motivation and the second was the "economic" motivation. Behind the emigrationist motivation lay the belief that it would be desirable to have areas of the world where Germans could go, live, set up homes and establish new societies while maintaining their culture and language and while maintaining ties and providing benefits to the German homeland. To some extent this idea was a response to the problem of German overpopulation and large-scale, nineteenth century emigration, particularly to America and places where the new emigrants and their descendents would lose their culture and language, and bring little benefit to Germany. In such cases, the native peoples were not seen as a source of potential benefit for the colony, but instead as a hindrance to be displaced.[109] Some have tied the ideology of German emigrationist colonialism to the concept of "lebensraum" (Living Space) which became an important component of later, Nazi expansionist

[109] See Woodruff D. Smith, *"The Ideology of German Colonialism, 1840-1906,"* 641-642, for an introduction to this concept and the remainder of the paper for details.

ideology.[110] Although this idea had little effect on German policies in China, it often had an effect on the development of German colonial policies, was an important motivator behind German discussions of colonialism and played an important role in the development of some German colonies particularly in South West Africa.

The second motivation behind German colonialist policies was economic. Economic colonies were envisioned as providing benefit to Germany and German companies through development of business enterprises that utilized local resources and local peoples. This was the primary motivation behind many German colonies, including those in Samoa and the pacific.[111]

Although these were the two prominent motivators behind German colonial efforts throughout the world, German colonial efforts in China did not fall clearly into either category. The German colony in Tsingtao (Qingdao) was administered by the German navy, and, as we shall see below, especially in its early years including the time of Haberer's research, colonial efforts there were small and somewhat unfocused.

Worldwide, the German colonies were not particularly successful either in terms of bringing economic benefit to the home-country or in providing new homes for German settlers. Their primary importance was symbolic.[112] The German colonies at Qingdao, at this time, also seem to

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[110] See Woodruff D. Smith, *"Friedrich Ratzel and the Origins of Lebensraum,"* for details.

[111] See Woodruff D. Smith, *"The Ideology of German Colonialism, 1840-1906,"*.

[112] See Klaus Epstein, *"Erzberger and the German Colonial Scandals, 1905-1910,"* 637.

In 1904, there was a total German population of only 5,495 throughout all of Germany's colonies and their total trade with Germany in the twenty years prior to 1904 was only 318 million marks.

have had little importance in most ways, and most of their accomplishments, such as a school for Chinese, were developed later, in the wake of a widespread colonial scandal which erupted in 1904. This scandal had a great effect on German politics and provoked many reforms and improvements in German colonial policies.

It is no doubt significant that when the Germans began using Chinese "coolie" labor to work on agricultural plantations in Samoa in 1903, they recruited the first 289 "coolies" in Swatow (Shantung), an area that lay outside German control, using pre-existing "coolie" labor recruitment networks, rather than attempt to recruit such laborers from within the German colonial region of China. This recruitment outside of colonial German areas becomes even more striking when put in the context that the recruitment of Chinese "coolie" labor in Samoa was highly controversial and done only under the very strict supervision of the German colonial administration in Samoa, who, theoretically, it would seem, would have been more likely to consider utilizing the services of their counterparts in Qingdao than private enterprise.[113]

As might be expected, within the various German colonies, discourse towards the native peoples varied widely. Such discourse varied from colony to colony. For instance in the African colonies where the intent was to displace the natives the local people were referred to much more harshly

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[113] See John A. Moses, *"The Coolie Labour Question and German Colonial Policy in Samoa, 1900-1914,"* 106.

According to Lynn Pan, 45, the term "coolie" was originally the name of an aboriginal Gujurat tribe in India. The term was extended to refer to transient labor. Eventually it entered Chinese as "ku li" which means "hard strength." At the time it entered Chinese, the term "coolie" was already being used by foreigners in China for menial laborers and household servants.

than in the Samoan colonies where the local peoples were seen as an economic resource. In the Qingdao colony, where the role of the local people was less defined, discourse about Chinese was much more mixed.

Furthermore, at Qingdao in 1900, discourse towards local Chinese varied widely among the varieties of colonial personnel.[114] During the early days of the colony attitudes and discourse towards the Chinese were quite negative. In short, as the colony was established and constructed, the local Chinese were not regarded as a people whose culture and institutions were worth preserving. Racial slurs were common, including the occasional reference to the Chinese as "kaffirs," a term more commonly used to refer to African natives. The use of these terms undoubtedly peaked during the Boxer Uprising when German troops had been instructed to treat the Chinese with "no mercy."[115] Although it became more visible following the colonial reforms of 1904, there was also sinophilia among the Germans and Europeans in China at this time, as well as widespread disdain for Chinese people and institutions.[116] (After 1904, there were more colonial institutions and colonial administrators that regarded the Chinese as equals and this necessitated a change in discourse.[117])

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[114] George Steinmetz. *"'The Devil's Handwriting': Precolonial Discourse, Ethnographic Acuity, and Cross-Identification in German Colonialism,"* 52.

[115] George Steinmetz, . *"'The Devil's Handwriting': Precolonial Discourse, Ethnographic Acuity, and Cross-Identification in German Colonialism,"* 66-67.

[116] George Steinmetz, *"'The Devil's Handwriting': Precolonial Discourse, Ethnographic Acuity, and Cross-Identification in German Colonialism,"* 73-84.

[117] George Steinmetz, . *"'The Devil's Handwriting': Precolonial Discourse, Ethnographic Acuity, and Cross-Identification in German Colonialism,"* 50.

4. Aid from Chinese

Nevertheless, like Haberer, these colonial-era scientists were quite dependent in several ways upon Chinese for assistance when doing research in China. As Fan writes in his paper, "Victorian naturalists in China":

> Collecting data about economic botany occupied an important part in the naturalists' research and they often had to rely on the local Chinese –magistrates, merchants, and so on—for specimens and information, either through the official channels or personal connections. The naturalists' positions as government officials provided them with status, authority and respectability, all of which facilitated their scientific enquiries. Chinese officials did not necessarily like Western government agents, but they were usually polite towards them and were willing to offer assistance to their enquiries as a friendly gesture. This kind of social intercourse in everyday life impinged only indirectly on Western imperial domination: it mainly followed the tradition of social etiquette between Chinese and British officials.[118]

[118] Fan Ti-fan, *"Victorian Naturalists in China: science and informal empire,"* 15-16.

As can be seen from the quote, the relationship between the European naturalists and the Chinese who provided them with information and specimens was often quite formal. There were also cases where it was quite complex, often ambivalent and at times characterized on both ends by under-handed dealings, great suspicion and genuine cultural misunderstandings. Fan discusses this in depth in his paper.

Scientists who did work in China were often quite dependent on Chinese in other ways as well.

Finding a good translator was also quite important, and these translators were usually Chinese. These were also often found and hired through networks of personal connections. For instance, when Bailey Willis did his research in China, he hired, and was quite impressed, by an interpreter called Li Shan, who was recommended to him by a judge in Tianjin named W.S. Emons, for whom Li Shan had done work as a detective.[119]

When Walter Granger, an American paleontologist who had connections with both the American Museum of Natural History and the China Geological Survey, went on his 1921-1922 expedition to South China he was accompanied by several Chinese including an American educated Chinese guide and translator, a cook, a pair of "assistants" and a Chinese taxidermist, many of whom had experience working in the Szechuan and Yunnan areas.[120]

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[119] David Oldroyd and Yang Jing-yi, *"Bailey Willis (1857-1949): Geological Theorizing and Chinese Geology,"* 9.

[120] Vincent L. Morgan and Spencer G. Lucas, *"Walter Granger, 1872-1941, Paleontologist,"* 25-26.

At times working with local translators who followed Chinese customs and had Chinese expectations could lead to interesting problems. For instance on one of his expeditions, Teilhard de Chardin's translator C.C. Young (Yang Zhongjian), apparently misled by local people, led the expedition to what was not only the wrong inn, but also an inn that was definitely of inferior quality to the one that they were supposed to stay in. Rather than correct the mistake and find the proper inn immediately, like some expedition members wished, Teilhard de Chardin decided that it would be best to preserve Young's "face" (Yang Zhongjian), and spend the night in the inferior inn without acknowledging the mistake.[121] (Teilhard de Chardin himself never learned much Chinese.)

Guides were necessary as well, and there was also a need for laborers to assist with expeditions in several ways, include the carrying of supplies.

While in the field, interactions with local people not involved in the expeditions often had an effect on events.

Interactions between Chinese and non-Chinese were often marred by poor intercultural relations of the time. Among many non-Chinese, there was prejudice against the notion of non-Chinese working under Chinese while doing archeological and paleontological work in China. Both Teilhard de Chardin and Sven Hedin were criticized by other Europeans for agreeing to work under Chinese while on expeditions in China.[122]

Despite dependence on Chinese (in various capacities) with the acquisition of archeological and paleontological finds, and the tendency for

[121] George B. Barbour, "*In the Field with Teilhard De Chardin,*" 79-80.

[122] Charlotte Furth, "*Ting Wen-chiang, Science and China's New Culture,*" 53.

these finds to often become museum exhibits, it's interesting to note that Chinese access to museums that displayed such exhibits was limited –even in China.

Andersson tells that on one occasion two of his Chinese assistants requested to accompany him, at their expense, to visit the Shanghai Museum. As Andersson says, one explained:

> We have collected a great deal for the Swedish Museum, but up to now I have never seen a museum and I know there is one in Shanghai. If we may go along, we will ourselves pay for our railroad fare and hotel expenses at a Chinese hotel.[123]

Andersson agreed to bring his assistants to the museum. When Andersson and his two companions arrived at the British-run Shanghai Museum, however, the British curator insisted that Chinese were only allowed in on Saturdays and that the rest of the week there was a Whites only policy in effect. Andersson pled with the curator, but the curator refused to allow the Chinese entry. In the end however, a Chinese employee of the British museum recognized one of the assistants as someone he knew, and allowed them entry after the curator had left the scene.[124]

The Perception Of Evolution And Darwinism Among Some Late Traditional And Early Republican Chinese Intellectuals.

[123] Johan Gunnar Andersson *"The Dragon and the Foreign Devils,"* 264.

[124] Johan Gunnar Andersson *"The Dragon and the Foreign Devils,"* 264-266.

As the subject of this thesis is the relationships between Chinese and non-Chinese surrounding the Peking Man digs of the 1920s, it is beneficial to discuss Chinese attitudes of the time towards the subjects of evolution and Darwinism.

Many of the radical reformers and revolutionaries in late traditional China had a strong interest in Darwinism, as well as related writings such as Thomas Huxley's philosophical writings on the ethical interpretations of Darwinism.

One of these was Wu Zhihui, a radical and Revolutionary who rose to prominence during the Republican period. Wu had a direct effect on the life of Ding Wenjiang, as he was the man who first encouraged Ding's family to send him abroad to Japan to pursue a modern-style education. Wu himself had gone abroad and studied not just radical politics, but also evolution and paleontology.[125] According to Kwok:

> His [Wu's] knowledge of the natural sciences and theory of evolution led him to doubt the so-called spiritual base of Chinese civilization and to begin advocating a fundamental reorientation of values.[126]

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[125] Although most of the information on Wu's life comes from 416-419, Howard L. Boorman and Richard C. Howard, *"Biographical Dictionary of Republican China, Vol. IV,"* the biographical dictionary does not mention an interest by Wu in paleontology or evolution. This reference comes from Charlotte Furth, "*Ting Wen-chiang, Science and China's New Culture,"* 23.

As an aside, upon the establishment of the Republic of China, Wu's primary intellectual contributions seemed to be in the area of language reform and he became active in the Republican government in other ways as well, including the interesting achievement that on May 20, 1948, he administered the oath of office to President Chiang Kai-shek.

[126] D.W.Y. Kwok, "*Scientism in Chinese Thought, 1900-1950,"* 34.

Therefore one appeal of Darwinian ideas was that they seemed to not just offer an alternative to traditional Chinese thought, but their study also encouraged the reader to consider and accept the need for change and to consider the possibility that an entity, no matter how old, might become extinct and disappear if it did not adapt to changes in its environment. To turn-of-the-century intellectuals who found themselves living in a very old, tradition-oriented civilization that was clearly having increasing problems coping with a changing world, such a message undoubtedly held a clear resonance.

Some have questioned just how deeply many Chinese intellectuals and radicals of this period really understood Darwin's ideas. Charlotte Furth, for instance, has written:

> . . . the vogue of Darwinism which had made terms like “struggle for existence” and “survival of the fittest” popular among radical Chinese youth had, in fact, little to do with the intellectual discipline of science. Rather science enjoyed vague prestige as the source of Western power, and this prestige led young Chinese to suppose for a while that in Darwinism they had found intimations of the moral order upon which this new world of power was based. They preferred the clichés of strife and contest, which seemed to sum up the spirit of Western imperialism, or else they turned to the sentimental humanitarianism of Kropotkin, which made evolution into a saga of developing social cooperation and mutual aid; or to the [Thomas] Huxley of Evolution and Ethics, in which Confucians, like Christians, could find comfort in

> the proposition that the process of modifying the future course of human evolution in a manner which will ensure their own preservation and refinement. Morality –either the selfish morality of power or the altruistic one of cooperation—is justified by natural history as by human tradition. This was the lesson Darwinism taught the reform-minded youth. But nowhere had they learned from it to consider science a rational method for ordering and interpreting observations about the world.[127]

In other words, science was respected and studied by many Chinese intellectuals because it was seen as one source of Western superiority. Simply because something is respected and studied, does not necessarily mean that it is understood properly or even understood at all. There is evidence that although Darwin was respected in late traditional China, his ideas were not very well understood.

For instance in 1889, a prestigious essay writing contest sponsored by the Shanghai Polytechnic challenged participants to explain the ideas of Darwin and compare them to Bacon and Spencer. Neither the first, second or third place winners showed much understanding of Darwin's theories and none described the theory of evolution through natural selection.[128] Possible reasons include a lack of Chinese language translations of Darwin. Yet the fact that Darwin's theories were chosen for a contest topic, and yet none of the winners (and possibly none of the judges) seemed to understand

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[127] Charlotte Furth, "*Ting Wen-chiang, Science and China's New Culture,"* 37-38.

[128] Benjamin A. Elman, *"On their own terms: Science in China, 1550-1900,"* 345-346.

Darwin's theories suggests both that Darwin was respected yet not well understood by Chinese of the time.

Sigrid Schmalzer states that one factor in this lack of understanding may have been who at this time in China was studying Darwin and why:

> The first to write on human evolution in China were not scientists. They were officials and intellectuals who sought to make sense of the related experiences of a declining Qing empire, encroaching imperialist powers, and an emerging Chinese nationalism. [129]

Their interests were in finding philosophies and ideas that were applicable to improving the state of their nation. These intellectuals were politically oriented and not necessarily interested in naturalism, the natural sciences or the origins of species or even the origins of mankind for their own sake. Not only was Darwinism assessed through this politically oriented filter, but those portions of Darwinian theory that allegedly helped with the reformers' political concerns, even if misunderstood, were likely to be emphasized when the ideas were repeated by the Chinese reformers of the time. To many, Darwinism was often seen less as a morally neutral scientific theory and instead as something which could be used to guide decision making on a fundamental level, although in differing ways.

There was a tendency to see evolution through natural selection not as a somewhat random, unpredictable process through which species split and change from one form to another based on circumstances largely

[129] Sigrid Schmalzer, "*The People's Peking Man: Popular Paleoanthropology in Twentieth Century China,"* 52.

outside their own control, but instead as a fairly steady, inevitable process of improvement of a race or species as inferior members died off.

According to Kwok:

> In the proper manner of the materialistic determinist, Wu read into the Darwinian hypothesis of natural selection the law of organic evolution. Indeed, all Chinese thinkers who admired Western civilization held this view of Darwin. To them evolution theory was proof positive that man is only matter, functioning in obedience with laws of motion. [130]

At a time when many in China were abandoning their old ideologies, Darwinism, and much of Western science in general, was often seen not as morally neutral theories for understanding the world, but as something more ideological in nature. As Kwok has written:

> Even though the Chinese tradition was not religious in the Western sense, the intensity with which the “old” (beliefs, religions, and institutions) was attacked can cause us to see in the worship of science in modern China a substitute religion or religious substitute. [131]

At this time, even if science and the scientific method were not properly understood by many Chinese intellectuals, a belief in science, and

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[130] D.W.Y. Kwok, "*Scientism in Chinese Thought, 1900-1950,"* 26.

[131] D.W.Y. Kwok, "*Scientism in Chinese Thought, 1900-1950,"* 30.

its positive power to improve the Chinese race and its place in the world, served an important need to many.

Ding Wenjiang was the first head of the China Geological Survey, and a friend and colleague of Johan Gunnar Andersson. Ding was also a Chinese intellectual and reformer who also had an interest in Darwin and Huxley. Ding's worldview was said to have:

> Combined the phenomenalism of Karl Pearson, the eugenics of Francis Galton, and the general theories of Darwin and [Thomas] Huxley.[132]

Karl Pearson and Francis Galton were both advocates of eugenics and the 'science of race improvement' in Britain. Pearson advocated in particular 'positive eugenics' or the idea that persons with superior genes should be encouraged to have more offspring than would naturally occur.[133]

Ding seems to have believed that the scientific pursuit of the past was useful because it helped overturn the out-moded, atavistic traditions that held China back. He once wrote:

> The Confucianist version of Chinese history, with its uncritical acceptance of the legends and its fanatical belief in the Golden Age .

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[132] D.W.Y. Kwok, "*Scientism in Chinese Thought, 1900-1950,"* 112.

[133] Frank Dikotter, *"Imperfect Conceptions –Medical Knowledge, Birth Defects, and Eugenics in China,"* 7, 105. Galton lived from 1822-1911 and his ideas were widely disseminated in both the West and China.

. . is as untrue as the Brahman version of Indian history before it was overthrown by scientific archeology. [134]

In summary, many Chinese intellectuals in late traditional China had an interest in Darwinism. Ding Wenjiang was among them. This does not necessarily mean, however, that they had a full understanding of Darwinism. At least some saw Darwinism in ideological terms and focused their interest on the need for adaptation to ensure survival, as well as the process through which species changed.

Part Four: Western Geology and Paleontology come to China

Ding Wenjiang –His Early Education.

It wasn't until the 1920s that the organized digs that found Peking Man and identified it as such came to pass. Although, as will be covered later, the funding and the expertise behind the digs came from abroad, the digs themselves were conducted under the auspices of the China Geological Survey.

Ding Wenjiang was the man most responsible for the structure and focus of the China Geological Survey. His duties and achievements included recruiting several foreign experts to assist China.

As one source states:

Ding Wenjiang [Ting Wen-chiang] is widely regarded as one of the sharpest minds of his times and was one of the forefront figures of

[134] Magnus Fiskesjo and Chen Xingcan, *"China Before China,"* 52.

Taken from Ding's book, *"Symposium on Chinese Culture."*

> the New Culture Movement. He was among the first Chinese with a complete Western science education. He made lasting contributions to Chinese geology, paleontology and prehistoric archeology, and was the founding director of China's National Geological Survey (NGS).[135]

This is only a partial list of Ding's accomplishments.

Ding (who lived from April 13, 1887 to January 5, 1936) was the second of four sons and was born in the remote town of Huang-chiao in Kiangsu province. His family was rural gentry, and Ding spent long hours in his early years between ages five and fifteen studying for the traditional Confucian-oriented, traditional bureaucratic examinations. Although the students at his school were apparently quite excited by the brief reforms of 1898, his educational experiences appear to have been otherwise uneventful until 1901.

This is the year he met Long Yanxian, a man who studied in the West, and persuaded Ding's family to send their 15 year old son to Japan for an education. Although it was not easy for his family, Ding attended school in Japan from 1902 until 1904 and was heavily involved in radical student politics. Among the issues the students preached and published against were opium use, footbinding, the Confucian education system, while also advocating for the emancipation of women. In 1904, as the Russo-Japanese war broke out with much of its fighting taking place in the Chinese territory of Manchuria, Ding decided to leave Japan.[136]

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[135] Magnus Fiskesjo and Chen Xingcan, *"China Before China,"* 10.

[136] Charlotte Furth, "*Ting Wen-chiang, Science and China's New Culture,"* 17-34.

Soon after his return to China, Ding decided to study in England. He was encouraged to do this by Wu Zhihui. Wu was 23 years older than Ding and had been involved in radical Chinese politics since 1901, when he became disillusioned upon seeing the Boxer uprising and its aftermath. In 1902 he had escorted a group of students to Japan but was soon deported by the Japanese authorities, following a clash between him and Cai Chun, the Chinese minister to Japan. Following time in China fostering ties with radical political groups, Wu soon was forced to flee again. This time, he left for Europe, ending up in Scotland where he studied at Edinborough. Among the subjects studied by Wu were not just radical politics, but also evolutionary theory and paleontology.

To Wu, like many Chinese intellectuals of his time, the natural sciences and evolutionary theory in particular were not valuable for their use in understanding the world itself, but were considered to be of value because they offered insight into ethical and political questions of the time.[137]

Since much of Ding's interpretation of Darwin was quite similar to Wu, as well many other Chinese intellectuals of this time, it is worth expanding a bit on what Darwin and evolutionary theory meant to Wu.[138]

[137] For instance see, D.W.Y. Kwok, "*Scientism in Chinese Thought, 1900-1950,"* 34.

[138] At this time, I have not yet found any direct statements concerning the influence that such beliefs may have had on Ding's later strong support and facilitation of paleontological digs in China, but it seems likely that the influence was there.

Illustration 2. Ding Wenjiang [Ting Wen-chiang] From China Before China: Johan Gunnar Andersso, Ding Wenjiang, and the Discovery of China's Prehistory.

D.W.Y. Kwok describes Wu's beliefs thusly:

> In the proper manner of the materialistic determinist, Wu read into the Darwinian hypothesis of natural selection the law of organic evolution. Indeed, all Chinese thinkers who admired Western civilization held this view of Darwin. To them evolution theory was proof positive that man is only matter, functioning in obedience with laws of motion. [139]

As stated, it's questionable as to how accurate an understanding of Darwin's theories was commonly held by many Chinese intellectuals of this time. Rather than focus on the way in which Darwin's theories helped explain the natural world, it was their belief that Darwinism illuminated a path by which man could improve, adapt and change to better survive and prosper as conditions around him changed. To Chinese intellectuals of this time, a time of clearly unprecedented change in their civilization and society, there was a perception that such a path to positive change and adaptation to new circumstances was much needed.

Later Kwok expands further upon this idea:

> Darwin revived faith in the empirical method. His contribution lay in the formulation of an hypothesis of the evolution of man. . . . Most important is the fact that it lowered the exalted level of the human intellect and moral faculties, formerly thought to be marks of man's ineffable spirituality. Man was now different from beast only in degree

[139] D.W.Y. Kwok, "*Scientism in Chinese Thought, 1900-1950,"* 26.

> and not in kind, his so-called intellectuality considered an evolution of primitive animal intelligence and his moral sense thought to be a higher degree of sophistication of the instinctual facilities of the animal. Empirical scientism, thanks to Darwin, now flourished once more. Science became glorified for those who were persuaded that the scientific method led to truth and knowledge.[140]

In other words, although Darwinism on one hand lowered man down to the level of an animal, on the other hand Darwinism was also perceived as showing a path by which man could improve his abilities and nature. This path was perceived as lying in science. Therefore, Darwinism provided Chinese intellectuals with both a perception that change in man's nature, ability and status was possible, as well as a belief that the means to navigate and follow this path lay through the study and application of Western science.

> Even though the Chinese tradition was not religious in the Western sense, the intensity with which the “old” (beliefs, religions, and institutions) was attacked can cause us to see in the worship of science in modern China a substitute religion or religious substitute. [141]

By this we can see that at this time, due to the decline of the old Chinese way of life and with it a decline in respect for the ideologies and

[140] D.W.Y. Kwok, "*Scientism in Chinese Thought, 1900-1950,"* 28.

[141] D.W.Y. Kwok, "*Scientism in Chinese Thought, 1900-1950,"* 30.

philosophies on which this civilization was based, a spiritual void had emerged in China and was growing. To some extent, an increasing respect for science was emerging among many Chinese intellectuals. In part this increased respect for Western science was emerging to fill this void. One factor in the belief that science could provide answers to the questions facing China was the belief that Darwinism, as perceived by many Chinese intellectuals of this time, showed that man could and had adapted to new situations and through this adaptation had prospered and survived.

When seen from this perspective, the question needs to be asked as to whether or not this was an accurate understanding of the ideas of Darwin. When describing the views of Ding and his contemporaries on Darwin, Charlotte Furth has written:

> . . . the vogue of Darwinism which had made terms like “struggle for existence” and “survival of the fittest” popular among radical Chinese youth had, in fact, little to do with the intellectual discipline of science. Rather science enjoyed vague prestige as the source of Western power, and this prestige led young Chinese to suppose for a while that in Darwinism they had found intimations of the moral order upon which this new world of power was based. They preferred the clichés of strife and contest, which seemed to sum up the spirit of Western imperialism, or else they turned to the sentimental humanitarianism of Kropotkin, which made evolution into a saga of developing social cooperation and mutual aid; or to the [Thomas] Huxley of Evolution and Ethics, in which Confucians, like Christians, could find comfort in the proposition that the process of modifying the future course of

> human evolution in a manner which will ensure their own preservation and refinement. Morality –either the selfish morality of power or the altruistic one of cooperation—is justified by natural history as by human tradition. This was the lesson Darwinism taught the reform-minded youth. But nowhere had they learned from it to consider science a rational method for ordering and interpreting observations about the world.[142]

Therefore, we can see that the aspects of science that many Chinese intellectuals of this time considered important were often not aspects of science that most Western scientists of the time considered to be important or significant when doing science or engaging in scientific research. Again science, and Darwinism in particular, were seen as a path to the political, philosophical and social regeneration of the Chinese people during this time of change.

It's interesting to view Ding's support of archeology and paleontology in this light. He was a man with a great respect for and belief in the power of science. Undoubtedly he felt that a more scientific understanding of China's past would lead to a more scientific and thus morally sound and dynamic future for China as well.

Ding Wenjiang in England.

At times, it seems incredible that young Ding managed to survive in England at all, much less successfully obtain the education he was later to use.

[142] Charlotte Furth, "*Ting Wen-chiang, Science and China's New Culture,"* 37-38.

Naive and grossly under-funded, still a teenager, with two friends accompanying him, Ding set out to study in England, taking a German steamer. During a stopover in Penang, the group had a chance to meet with the famed late Qing reformer, Kang Youwei, who gave them not just moral encouragement and advice but also a loan of ten pounds and an introduction to his son-in-law in London. Upon arrival the group discovered that Wu Zhihui, the man who had encouraged them to come, was penniless himself. Although one of his companions stayed with Wu, Ding and his second companion were ultimately taken in by a local man, a Dr. Smith, who had been a medical missionary to China. Smith also arranged for the pair to attend the local secondary school in Spaulding in Lincolnshire. This is where Ding received his introduction to Western scientific education.

Ding was admitted to Cambridge yet despite having become a Chinese government scholarship student, was unable to afford Cambridge. Instead he went to Glasgow University where, seven years after leaving China, he received a B.S. in 1911 with a double major in zoology and geology.[143]

According to Furth:

> In science Ding found the intellectual mistress of his life. On the most practical level it gave him an important work to do. Like most Chinese, he originally had been drawn toward science because of its utility. Geology was directly applicable to the development of China's

[143] Charlotte Furth, "*Ting Wen-chiang, Science and China's New Culture,"* 17-34, and 278-282.

Howard L. Boorman and Richard C. Howard. *"Biographical Dictionary of Republican China, Vol. III."*

> mining industries, which in the early twentieth century remained either neglected or under foreign control, and Ding was destined to be a rare Chinese technical expert in the field. But more important, in Edwardian England the biological view of man still retained some of the potency of a recently discovered and controversial truth of such broad explanatory force that much in man's idea of the world was inevitably affected by it. The most eminent proponent of Darwinian science, Thomas Huxley, was also the chief intellectual influence upon Ding during his stay in England. Stimulated by the great Victorian, Ding found in science a world view, an intellectual methodology, and a touchstone for value.[144]

In other words, although Ding was drawn to science for reasons that were probably idealistic, through the study of science he was able to not only retain his idealism but also to find a pragmatic way to apply it to use science to improve China. He did this through the study of geology. But not only did he develop an expertise in geology, he retained his interest in evolution as an ethical force that could lead to the betterment of man and human societies.

Ding Returns To China.

After his return to China, Ding traveled and taught school until 1912. In 1913, he went to Beijing to serve as head of the geology section of the

[144] Charlotte Furth, "*Ting Wen-chiang, Science and China's New Culture,*" 26.

department of mining administration of the Ministry of Industry and Commerce.

This office was primitive to say the least. According to Furth:

> In February 1913 Ding arrived in Peking at the geology department's offices, which had opened shortly before his appointment. He found that they consisted of one large room, devoid of books, maps or specimens, and of three assistants so unlettered in the field that they did not even know the existence of famous coal fields in the Western Hills near Peking. In practice the section was a bureau for processing official documents. Appropriations were scanty, and the only way to finance field work was through merchants who asked the department for aid in prospecting. Only one other Chinese with advanced geological training could be found to join the section –Chang Hung-chao, a graduate of the University of Tokyo.[145]

Faced with these problems, Ding's immediate goals were to train geology students, recruit foreign personnel to compensate for the shortage of trained Chinese and assist with this training, and to survey his nation's geological resources.[146]

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[145] Charlotte Furth, "*Ting Wen-chiang, Science and China's New Culture,"* 39.

[146] Although the China Geological Survey made great contributions to the exploration of China and surveying of its resources, it also needs to be noted that it was, in many ways, not a terribly effective organization when it came to many areas where one might imagine it would have an impact.

For instance in the area of mining and mine regulation, its undoubtedly significant that neither Tim Wright's *"Coal Mining in China's Economy and Society, 1895-1937,"* 1984, Cambridge University Press, or Ellsworth C. Carlson's *"The Kaiping Mines, 1877-1912,"*

Nevertheless, as head of the geology section of the department of mining administration of the ministry of industry and commerce, Ding spent a period of time exploring and engaging in geological surveys of Yunnan and other remote parts of China. While conducting these surveys, Ding attempted to assess and study deposits of coal, tin, and copper while also looking for fossil remains and studying the customs of the non-Han minority peoples of these regions.[147]

1957, 1971, East Asian Research Center, Harvard University Press. Cambridge MA, contain the following terms, names or items in their index.: Johan Gunnar Andersson, Ding Wenjiang, Herr Solger (a German geologist active in China who was recruited by Ding to assist with training geologists but left the country in 1914 because of the war), the Department of Commerce and Agriculture, or the China Geological Survey.

This is in spite of the fact that according to Charlotte Furth, "*Ting Wen-chiang, Science and China's New Culture,"* 41, when Ding ran the first school for Chinese geologists it was called the Geological Institute and under the Bureau of Mines.

Apparently none of these had any effect on the subjects covered in these books that the authors considered worth mentioning. With Carlson this is perhaps easily understandable as his book covers the period only up until 1912 and an area which in 1911 fell into the hands of the British and was outside effective Chinese control. With Wright this absence is much more notable.

What's even more significant perhaps is that the entire Republican Revolution of 1911 takes up very little space in these works. Although Carlson notes that the Revolution led to the Kaiping mines falling under British political control, Wright mentions the Revolution as little more than an event that caused brief instability that led to a drop in production. Furthermore, he describes this instability and drop as being overshadowed by many later periods of instability caused by the fighting of various warlord factions throughout the country.

When evaluating and considering the actions of the China Geological Survey as a whole and of the individuals within it, it is worth considering them in light of the general atmosphere of instability in the nation as well as the ineffectualness of the survey's ultimate parent organization, the Republic of China government itself.

Most reports of the Peking Man digs at Zhoukoudian make frequent mention of digging despite frequent periods when the sound of rifle and artillery fire from nearby battles between warlord factions could be heard at the site. Writings on the life of Davidson Black and the Peking Union Medical College frequently mention the difficulty in keeping employees during the nearby warfare.

[147] Howard L. Boorman, and Richard C. Howard, *"Biographical Dictionary of Republican China*," 278-279.

In 1916, in part due to Ding's urging, the Chinese government set up a new department called the Geological Survey of China under the Ministry of Agriculture and Commerce. Its purpose was to map the country and survey its natural resources. At this time, many countries had established or were establishing geological surveys of their own. The purpose of geological surveys were to promote knowledge of a nation's mineral resources, carry out national geological surveys and to undertake scientific geological research.[148] Ding, who had worked for the creation of this establishment, became its first director.[149]

At this time a surprising amount of China remained unexplored and its resources unmeasured. A survey was much needed. As much of the interior of China still had not been explored, its resources were left undocumented and unevaluated. The best book on the subject was a five-volume work published between 1877 and 1912 by Ferdinand Von Richtofen, a German geographer who had made seven journeys through the country. Although this work was a standard reference for thirty years, it was neither complete nor liked by most Chinese.

For instance, it stated the following:

> . . . the Chinese man of letters is sluggish and chronically loath to move rapidly: in most cases he simultaneously vexes one with his avarice and cannot free himself from native prejudices concerning

[148] H.T. Chang, *"The Geological Survey of China,"* 233.

[149] Charlotte Furth, "*Ting Wen-chiang, Science and China's New Culture,"* 17-34, and 278-282, Howard L. Boorman and Richard C. Howard, *"Biographical Dictionary of Republican China, Vol. III."*

decorum. In his view to go on foot is demeaning and the occupation of geologist a direct surrender of all dignity in the eyes of the world.[150]

Years later Ding used this same quote on the heading of the first all-Chinese journal of geology.[151]

During many of his travels in the interior, Ding had used the diary of Xu Hongzu, a famous 17th century Ming dynasty explorer, seeing it as both a useful guide as well as inspiration.[152]

As first director of the survey, Ding had many accomplishments. In addition to surveying the interior of China, Ding also created the National Geological Survey's first museum. This museum had "3,250 specimens of ores, minerals, rocks and fossils, properly labeled and exhibited under glass." The museum was located in the survey's compound in Fong Shong Hutung.[153]

Ding also created the National Geological Survey's first library. This was done by soliciting funds from private individuals and mining companies. 40,000 dollars were raised and used towards a building containing 8,873 volumes.[154]

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[150] Charlotte Furth, "*Ting Wen-chiang, Science and China's New Culture,"* 39-40.

[151] Charlotte Furth, "*Ting Wen-chiang, Science and China's New Culture,"* 40.

[152] Howard Boorman and Richard C. Howard, *"Biographical Dictionary of Republican China,"* 279.

[153] H.T. Chang, *"The Geological Survey of China,"* 234. The quote comes from page 234.

[154] H.T. Chang, *"The Geological Survey of China,"* 234. As the source for the value of funds raised is an American publication from 1922, it is assumed that the sum "Forty thousand dollars" is in 1922 U.S. dollars.

In 1922, both the library and the museum were opened to the public.[155]

Ding was head of the Chinese Geological Survey until 1921, when he was succeeded by Weng Wenhao,[156] a man also quite important in the story of the Peking Man digs. Although from May to December 31 of 1926, Ding had been involved in a modernization project in Shanghai, where he held the title "director of the port of Woosung (Wusong) and Shanghai," he had abandoned this post, possibly because the Northern Expedition soldiers were on their way to take the city.(The city was under the control of a warlord who, Ding later stated, he had hoped would reunite China.) At the time the digs began he was residing in Dairen, where he was devoting his efforts to editing an edition of the diary of Xu Hongzu, the famous Ming dynasty explorer whose exploits in central China he had much studied and admired.[157]

Part Five: Johan Gunnar Andersson and the China Geological Survey

Johan Gunnar Andersson In China.

Johan Gunnar Andersson, a Swede, was another key figure behind the Peking Man digs. An economic geologist by training, from 1901 to 1903

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[155] H.T. Chang, *"The Geological Survey of China,"* 234.

[156] Most sources, such as Fiskesjo, and the Biographical Dictionary of China state that Weng assumed the directorship of the China Geological Survey in 1921, succeeding Ding. H.T. Chang, writing at the time, however states that Ding was still the head of the survey.

This apparent discrepancy is most likely because, as explained in Fiskesjo and Chen, 56, although Ding left his post in 1921 to become an executive for the Peipao coal mining corporation, Ding was still the honorary director of the National Geological Survey.

[157] 278-282, Howard L. Boorman And Richard C. Howard, *"Biographical Dictionary of Republican China, Vol. III."*

Andersson had explored both the Arctic and Antarctic[158] and been active in an effort to map worldwide geological resources.[159]

In 1906 Andersson was appointed Director of Sweden's Geological Survey. He attracted a great deal of positive attention when he launched a project designed to catalog and assess iron resources worldwide, a project that later led to the publication of The Iron Ore Resources of the World.[160] Andersson gained further fame when he hosted the 11th International Geological Congress in Stockholm.[161]

To the Chinese, anxious to explore and utilize their own mineral resources, the iron ore project was particularly interesting, and efforts were made in China to recruit Andersson.[162] On May 16, 1914, Andersson assumed a position as Mining Adviser to the newly formed Chinese Republican government and its Ministry of Agriculture and Commerce. He was one of several foreign experts recruited with the assistance of Erik Nystrom, a Swedish geologist who had been resident in Taiyuan, Shanxi province for many years.[163]

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[158] Noel T. Boaz and Russell L. Ciochon, . *"Dragon Bone Hill,"* 4.

Dates of service in Antrarctica come from Jia Lanpo and Huang Weiwen, "*The Story of Peking Man,"* 10.

[159] Noel T. Boaz and Russell L. Ciochon, . *"Dragon Bone Hill,"* 4.

[160] Magnus Fiskesjo and Chen Xingcan, *"China Before China,"* 14.

[161] Magnus Fiskesjo and Chen Xingcan, *"China Before China,"* 14.

[162] I have thus far been unable to learn more about this recruitment. My best guess is that Weng Wenhao had a hand in it somehow as he was a geologist by training, who had received his education in Europe where he received a doctorate in 1912 and in 1912 he became head of the mining section of the ministry of agriculture and commerce. Therefore he was in all the right places with the right knowledge at all the right times needed to recruit Andersson to come to China.

[163] Magnus Fiskesjo and Chen Xingcan, *"China Before China,"* 14-16.

In their first year, Andersson, accompanied by his fellow Swede Nystrom, explored the geology outside of Beijing. His main assignment was to explore Chinese rock units for deposits of coal, oil, natural gas, and ore-bearing deposits.[164] In this capacity he was quite successful and was even asked to meet with then-President Yuan Shih-Kai to report on his discoveries.[165]

During this time, Andersson continued collecting fossils. Soon after arrival in China, he began corresponding with missionaries and other foreign residents in Central China, informing them of the finds of Schlosser and Haberer, and asking if they might know of the locations of any great fossil sites.[166] It's interesting to compare this action with that of the Victorian era scientists who also used pre-existing networks, including the same networks of Protestant missionaries, to pursue their research goals. It is very likely that these missionaries, in turn, received much of their information from their Chinese parishioners and neighbors.

In some other ways, Andersson was not too different from his Victorian era predecessors. For instance, he too purchased fossils, a

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Also Jia Lanpo and Huang Weiwen, *"The Story of Peking Man,"* 10.

Nystrom was active at the newly formed university in Shanxi and was the founder of the "Sino-Swedish Scientific Research Institute" in Peking (also from Magnus Fiskesjo and Chen Xingcan, 14-16.)

This author has thus far been unable to obtain further details about the recruitment and contract of Johan Gunnar Andersson save that his first contract lasted one year and his second position and contract were different from the first.

[164] Noel T. Boaz and Russell L. Ciochon, . *"Dragon Bone Hill,"* 5.

Also Magnus Fiskesjo and Chen Xingcan, *"China Before China,"* 14-16.

[165] Magnus Fiskesjo and Chen Xingcan, *"China Before China,"* 16.

[166] Jia Lanpo and Huang Weiwen, *"The Story of Peking Man,"* 10.

practice that has marred his reputation today among some archeologists and paleontologists in and outside of China.[167] Curiously, however, during this period, it seems that at least some of the Chinese medicine dealers refused to sell fossils to foreigners, and there were times when Andersson was forced to rely upon the aid of his Chinese assistants as well as his official credentials with the Chinese government to purchase them.[168]

Andersson, Ding And Geological And Archeological Co-Operation Between China And Sweden.

It was about this time that Andersson and Ding first met. Andersson described the meeting and Ding as follows:

> . . .it was in the spring of 1915 . . . that my great personal experience in China began. That is when Ding Wenjiang, the director of the NGS [National Geological Survey], returned to Beijing from a long research trip to Southwestern China. He came back with a rich throve of scientific materials from the high plateaus and the malaria-ridden valleys of Yunnan, eager to sit down and work through his maps, diaries and fossils, but also at the same time full of ideas for new field ventures. Thus began a collaboration with him which lasted until [in 1925,] . . . [Ding] may not count as a typical Chinese for that he is too driving in his work, too demanding towards his collaborators, much too frank in his criticism, and has too keen a sense of merciless

[167] Magnus Fiskesjo and Chen Xingcan, *"The Story of Peking Man,"* 114-118 provides a brief historical assessment of Andersson and his work, both pro and con.

[168] This story is told in full in footnote 80, and comes from Johan Gunnar Andersson, *"The Dragon and the Foreign Devils,"* 267-269.

justice. But as one of the most advanced members of today's Chinese intelligentsia, he is a shining representative of his people. [169]

Despite the obvious-period racism in the statement, Andersson undoubtedly thought highly of Ding. Not only did they work closely together and correspond for years, long after Ding was no longer Andersson's employer, but both the Swedish and the English language editions of The Dragon and the Foreign Devils were dedicated to Ding Wenjiang.[170]

Unlike many Chinese of this period, Ding was apparently quite able to interact effectively with non-Chinese. Ding once stated the following:

It can be seen that when foreign specialists cannot co-operate with Chinese, it is not always the foreigner's fault.[171]

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[169] This quote comes from Magnus Fiskesjo and Chen Xingcan, *"China Before China,"* 16 where it is stated that it comes from Andersson's book, *"The Dragon and the Foreign Devils."* The quote does not, however, appear in the English edition of *"The Dragon and the Foreign Devils."*

The quote comes from the earlier Swedish language edition of the book which is much longer than the later English version. The Swedish language edition, entitled "*Draken och de frammande djavlarna*," was published in 1926 and the English language version was published in 1928.

It's interesting to speculate as to the many possible reasons as to why the quote does not appear in the English edition of the book that came out two years later.

Finally, it's interesting that Andersson refers to Ding as "Dr. Ting," because while no doubt brilliant and deserving of one, I have not been able to yet find out when and where Ding obtained a doctorate. Apparently he left Edinborough with a bachelor's degree and his life seems to have been quite full of events with little time or opportunity for graduate study. The degree apparently was honorary although I have not yet been able to learn where Ding received it.

[170] Magnus Fiskesjo and Chen Xingcan, *"China Before China,"* 16, and Johan Gunnar Andersson, *"The Dragon and the Foreign Devils."*

[171] Charlotte Furth, "*Ting Wen-chiang, Science and China's New Culture,"* 40.

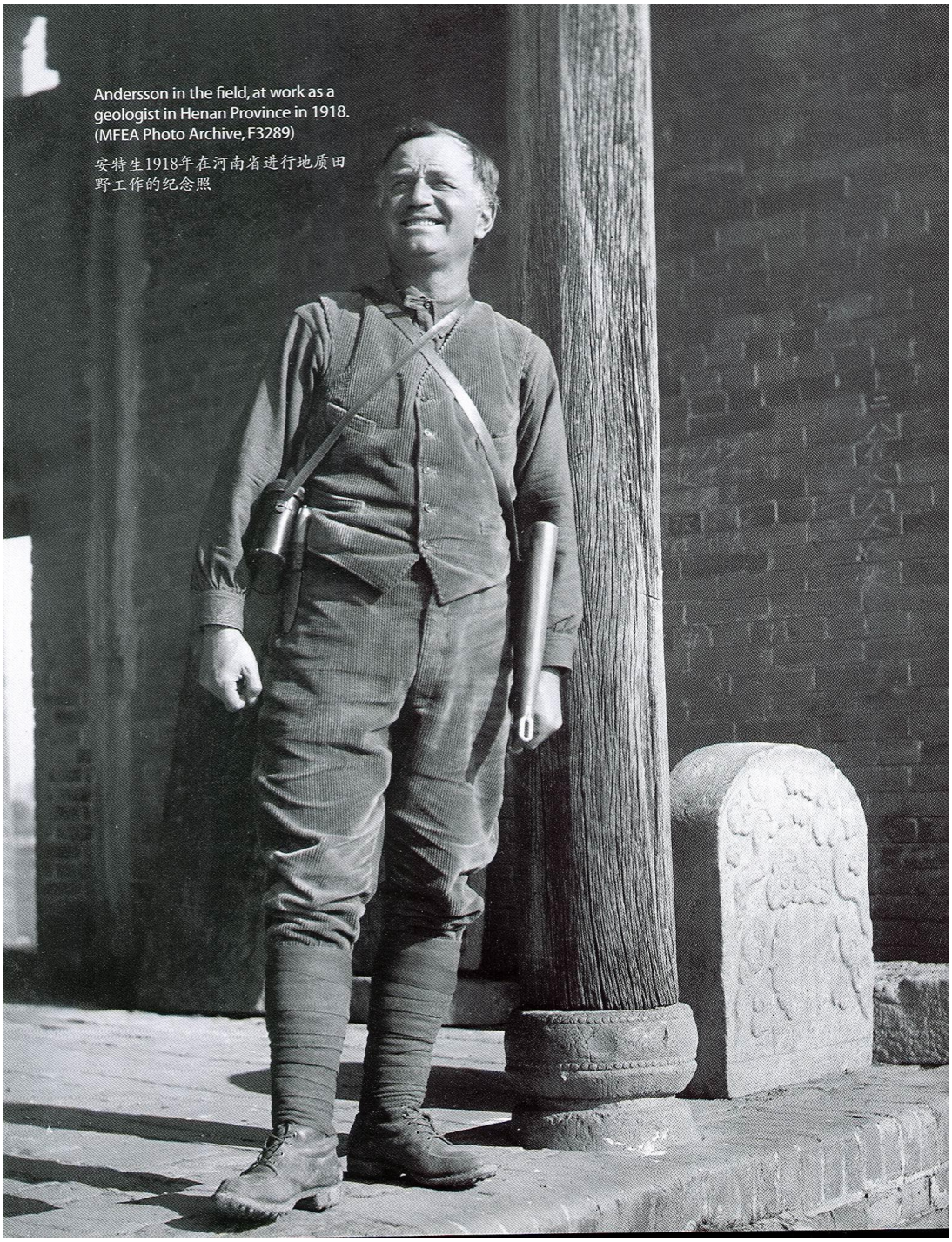

Illustration 3. Johan Gunnar Andersson, known in Sweden at the time as "Kina-Gunnar" Andersson ("China Gunnar") –from China Before China: Johan Gunnar Andersson, Ding Wenjiang, and the Discovery of China's Prehistory,

Throughout his career Ding recruited many foreigners to China, including, coincidentally Amadeus Grabau, the man who many years later coined the phrase "Peking Man" to describe the hominid fossil remains found at Zhoukoudian.[172] Ding was also noted for being able to co-operate with Herr Solger, a German geologist reputed by Chinese to be very difficult to work with.[173]

Andersson's contract was extended. His geological explorations continued, as did his interest in archeology, paleontology and fossils. Andersson dispatched technicians on fossil hunting expeditions to Shanxi, Gansu and Henan Provinces. Fossils collected from these digs were shipped to Professor Carl Wiman of the Institute of Paleontology at Uppsala University, Sweden.[174]

Andersson and Ding had an arrangement as to what was done with fossils and archeological finds. This arrangement was part of an overall Swedish-Chinese exchange in geology and paleontology (although it also involved the exchange of much information and findings and materials from the field of archeology as well.) The agreement appears to have evolved over several years until it reached its final form.

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[172] Johan Gunnar Andersson *"The Dragon and the Foreign Devils,"* 257-258.

[173] Charlotte Furth, "*Ting Wen-chiang, Science and China's New Culture,"* 37-42.

Herr Solger came to China in 1910, before the founding of the Republic. He led China's first modern geology class in 1910, as well, but the class ended early due to lack of students. In 1914, upon the outbreak of the first world war, Solger returned home. His position was assumed by Weng Wenhao, who later became the second director of the China Geological Survey and held that position at the time of the 1926 Peking Man excavations at Zhoukoudian.

[174] Jia Lanpo and Huang Weiwen, *"The Story of Peking Man,"* 10.

A key event was when in 1919 Ding visited Sweden as a side-trip while touring Europe as part of the Chinese delegation to the peace negotiations which followed World War One. While in Sweden, Ding visited Kiruna, a state-run mining town in the far north, and met with Zhou Zanheng, a Chinese geology student enrolled in Swedish schools as part of the on-going Swedish-Chinese geological exchange. He also met with Axel Lagrelius, a prominent Swedish industrialist, in Stockholm.[175]

On September 15, 1919, Lagrelius founded the China Committee, an organization that was originally intended as a fundraising organization for Andersson's paleontological research activities in China. Lagrelius recruited Louis Palander of Vega, an elderly Swedish Navy Admiral and polar explorer, to be committee chairman, and Gunnar Andersson, a geographer.[176] Lagrelius was a friend of the Swedish Crown Prince. In fact,

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[175] Magnus Fiskesjo and Chen Xingcan, *"China Before China,"* 20.

[176] Magnus Fiskesjo and Chen Xingcan, *"China Before China,"* 20.

Note that from here on, and throughout this paper, unless specified, all references to "Andersson" refer to Johan Gunnar Andersson, the geologist who was active in China, and not to Gunnar Andersson, the geographer who served on the China Committee in Sweden.

I have been able to find surprisingly few details of Andersson's contract, pay or exact position within either the Chinese government or the China Geological Survey during his period of employment in China. He writes surprisingly little about these things in *"The Dragon and the Foreign Devils."* (At least the English language edition.) He does however leave the reader with such details as he had a relatively large house in Beijing with several servants and seems to have lived a comfortable lifestyle.

According to Magnus Fiskesjo and Chen Xingcan, *"China Before China,"* 54, Andersson's salary was dependent on the budget and financial situation of the National Geological Survey of China. The National Geological Survey was strongly supported by President Yuan Shi-kai, but its funding diminished following his death in 1916.

During 1921 and into June of 1922, Andersson's salary was unpaid due to political instability and exchange rate fluctuations. Much of his correspondence to home and to the China Committee in Sweden during this period affected this situation.

This lack of payment was one reason from 1921 onwards his attention shifted from governmental geological investigations, which were primarily funded by the troubled

the prince was the "Protector" of the committee and succeeded Palander as Chairman.[177] It was this foundation that provided the funds for the salaries of such people as the Longushan excavators and Zdansky, as well as paid for the shipments of fossils from China and the funds for Wiman's laboratory.[178]

Altogether, Andersson was to spend over ten years exploring China, from 1914 to 1926, and during this time collected many artifacts of many kinds. These artifacts were generally split fifty-fifty, with the Chinese government keeping half and the Museum of Far Eastern Antiquities in Sweden getting the other half.[179] There were also detailed agreements between Ding and Andersson over who could publish which findings, and when and where, with an emphasis on ensuring that Ding's new Chinese scientific publications be allowed first publication rights on many findings.[180]

Chinese government, to geology and paleontology, which were often funded by sources in Sweden.

Nevertheless, undoubtedly one appeal to Ding and the Chinese of employing Andersson seems to have been that he was able to raise funds to implement his projects abroad. I have been unable to find if his own salary came from these funds or not. Andersson issued regular reports on the spending of Committee funds to the China Committee in Sweden, however, and these reports are now on file at the Museum of Far Eastern Antiquities in Stockholm. The committee continues to exist and still serves the museum.

According to Magnus Fiskesjo and Chen Xingcan, *"China Before China,"* 58-60, Andersson donated his salary from 1924 until 1927 to contribute towards the publication of Paleontologica Sinica. It seems clear that by this time he had learned to live without need for his salary from the National Geological Survey of China.

[177] Jia Lanpo and Huang Weiwen, *"The Story of Peking Man,"* 24.

[178] Noel T. Boaz and Russell L. Ciochon, . *"Dragon Bone Hill,"* 13.

[179] Noel T. Boaz and Russell L. Ciochon, *"Dragon Bone Hill,"* 5.

[180] Magnus Fiskesjo and Chen Xingcan, *"China Before China,"* 68. There was a disagreement between Ding and Andersson in the early 1930s over whether or not Andersson had followed this agreement with a particular set of publications. Although things were smoothed out, and Andersson apologized profusely, at one point Ding thought Andersson was ignoring him and went over his head, writing a complaint to the prince of Sweden.

In special situations, such as those involving human remains, new agreements were made between the Swedes and the Chinese government. Under a 1925 agreement, there was just one set of human remains allowed to be displayed in the Swedish Museum, and that was of a prehistoric, modern human, a homo sapiens, referred to as the "Banshan chieftan." Although the so-called "Banshan Chieftan" (who, although discovered near a place called "Banshan," is increasingly believed not to have been a chieftan at all, as other graves from the same time and place as his appear to have often been more elaborate than his) is of archeological interest, the specimen is completely unconnected with Peking Man and the digs for him were not related.[181]

Under these agreements Chinese materials thus obtained were displayed in the new Museum of Far Eastern Antiquities, established for this purpose and as a research center in Asian archeology. Although the museum itself was moved several times, the artifacts collected remained the core of its collection at different locations.[182]

Part Six: The Digs Begin: The 1918 Outing To Zhoukoudian.

In 1918, Andersson had heard from J. McGregor Gibb, an American missionary at, according to Andersson, "the mission university that which at that time bore the somewhat pretentious title of Peking University."[183] Gibb

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Nevertheless most of their correspondence later in their careers appears to have been both amicable and professionally oriented.

[181] Magnus Fiskesjo and Chen Xingcan, *"China Before China,"* 126-130.

[182] Magnus Fiskesjo and Chen Xingcan, *"China Before China,"* 64.

[183] Johan Gunnar Andersson, "*Children of the Yellow Earth –Studies in Prehistoric China,"* 95.

not only told Andersson about some fossil bones he had seen in the Chinese village of Zhoukoudian (then anglicized as “Chou k'ou tien.”), but showed him samples of these fossilized bones. The bones were small, fragmented and covered with red clay, a common sediment in caves in North China.[184] Zhoukoudian was 50 kilometers southwest of Beijing and located on the railroad line.

On March 22 and 23 of 1918, Andersson visited Zhoukoudian. The locals took him to an outcropping of red clay-like rock that stood alone in a limestone quarry. There were many small bones protruding from the sediment. The local name of the place was “Ji Gu Shan” (then anglicized as “Chikushan”) which meant “Chicken Bone Hill.” The villagers believed that it was unlucky to dig there and said that people who had had been driven insane by the angry fox-spirits which had allegedly devoured all these chickens and left their bones. Andersson excitedly wrote down the location.[185]

As an aside, it’s not known with certainty when the local Chinese discovered these bones, but if one assumes that the discovery of the bones occurred at the same time as the discovery of the limestone kilns, then the existence of these kilns dates back to sometime during the Song Dynasty (960-1279AD).[186] Curiously, although local people had been excavating fossilized bones from the Zhoukoudian area for many years, the results were only marketable in the previously mentioned medicine market in Anguo County, Hebei province during market time. Consumers were hesitant to

[184] Noel T. Boaz and Russell L. Ciochon, *"Dragon Bone Hill,"* 5.

[185] Noel T. Boaz and Russell L. Ciochon, *"Dragon Bone Hill,"* 6.

[186] Jia Lanpo and Huang Weiwen, *"The Story of Peking Man,"* 12.

purchase bones elsewhere or at different times, as they felt this increased the likelihood of purchasing a counterfeit “dragon bone.”[187]

The 1921 Excavation At Zhoukoudian.

Due to his many other projects, however, it was three years before Andersson could return to this spot and collect fossils.[188] When he did, he was accompanied by Otto Zdansky, an Austrian, and Walter Granger, an American.

Originally from Vienna, Zdansky had studied under Carl Wiman. Andersson had brought Zdansky to China to excavate a discovery of three toed horse (hipparion) fossils found in Henan province, and Andersson felt that these digs might provide a good practice run for Zdansky.[189] (Interestingly enough, Granger had also done work analyzing the remains of prehistoric horse ancestors.)[190]

Andersson also used Zdansky to assist him with archeological excavations.[191]

Walter Granger, an American paleontologist, also accompanied the expedition to Chicken Bone Hill. Granger had been assigned to China by the American Museum of Natural History as the chief paleontologist and second

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[187] Jia Lanpo and Huang Weiwen, *"The Story of Peking Man,"* 12.

[188] Andersson describes these digs and the Zhoukoudian area first hand in *"Children of the Yellow Earth,"* 94-102.

[189] Noel T. Boaz and Russell L. Ciochon, *"Dragon Bone Hill,"* 6.

[190] Vincent L. Morgan and Spencer G, Lucas*, "Walter Granger, 1872-1941, Paleontologist,"* 14.

[191] Magnus Fiskesjo and Chen Xingcan, *"China Before China,"* 48.

in command of its Third Asiatic Expedition team. He arrived in Beijing in June of 1921.[192]

Granger was both well known and had many contacts in paleontological circles. For instance, like Schlosser, the man who had sponsored K.A. Haberer's expedition to China that had acquired the first known tooth of Peking Man, Granger had done work at the excavation sites in Fayum, Egypt. In fact, Granger had visited and met with Schlosser during his tour of Europe in 1911 and 1912, although it does not seem to be known if they explicitly discussed the mysterious tooth.[193] Granger was best known as an associate of Henry Fairfield Osborn who at the time was director of the American Museum of Natural History. Andersson thought, correctly it turned out, that they might learn much from having Granger accompany them.[194]

Zdansky arrived first and had set up camp in a local temple and begun digging at the Chicken Bone Hill site.[195]

As the three men began to dig at the site they were approached by a local man who, perhaps motivated by fear of the curse, told them that if they wished to dig for dragon bones then he could find an even better place for

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[192] Jia Lanpo and Huang Weiwen, *"The Story of Peking Man,"* 16. and Vincent L. Morgan and Spencer G. Lucas, *"Walter Granger, 1872-1941, Paleontologist,"* 21.

[193] Vincent L. Morgan and Spencer G. Lucas, *"Walter Granger, 1872-1941, Paleontologist,".* 18. The tour is described on 15.

[194] Noel T. Boaz and Russell L. Ciochon, *"Dragon Bone Hill,"* 6.

Although it would be interesting to know more about Andersson's motivations in inviting Granger to accompany them on the digs, in light of the competition between their two parent organizations, Andersson seems to have left little about his motivations in this regard. I have thus far been unable to learn more details on his exact motivations.

[195] Noel T. Boaz and Russell L. Ciochon, *"Dragon Bone Hill,"* 6.

them to dig. Intrigued, Andersson expressed interest and the three Europeans were soon taken to Longgushan, a site not far from Zhoukoudian, where they began their digs again.[196]

Here we see another example of native Chinese, in this case, a local man whose name does not even seem to have been recorded by history, assisting to direct the course of events that led to the discoveries.

Within an hour the group had found the jawbone of an extinct species of pig. They continued their digs, quite pleased with the new site. By the time a day's digging was finished, the group had found many exciting fossil bones. These included bones from Megalotragus pachyosteus, hyenas, bears, and other species. Granger showed Zdansky how to apply plaster jackets to fossils, the latest way to preserve fossils in the field. Andersson and Granger decided to take the train back to Beijing while leaving Granger to conduct the digs and jacket, sort, prepare and record the fossils that were found.[197]

For better or worse, however, rain began to pour and the next day Andersson and Granger were unable to make it to the railway station. Instead they found themselves stuck for three days in Zhoukoudian, crouching in the local temple, drinking and telling stories, until they finally decided that enough was enough and, "almost naked," holding most of their clothes over their heads, braved a flooded stream and waded across, as they made their way home.[198]

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[196] Noel T. Boaz and Russell L. Ciochon, *"Dragon Bone Hill,"* 6.

[197] Noel T. Boaz and Russell L. Ciochon, *"Dragon Bone Hill,"* 7.

[198] Noel T. Boaz and Russell L. Ciochon, *"Dragon Bone Hill,"* 8.

Zdansky was left behind to conduct the digs and ultimately wound up hiring 12 local men to assist him. Zdansky continued working at the site for four more months until the end of 1921.[199] After Granger left the site he returned to working with the Third Asian Expedition sponsored by the American Museum of Natural History under the leadership of Roy Chapman Andrews. It's a bit ironic that although one purpose of this expedition was to find the so-called "missing link" or evidence of early man, not only was it unsuccessful in this goal, and found no early man fossils, but its chief paleontologist had found such evidence elsewhere while not directly affiliated with the expedition before the expedition had begun.[200]

During this time, Andersson visited at least once and a difference between the motivations of the two men became apparent. While Andersson was quite anxious to find evidence and remains of prehistoric man, Zdansky considered this view to be sensationalistic and felt that if they were to focus on finding hominid remains then it would distract from finding other, equally important remains. At one point, for instance, during the visit, Andersson noticed some angular pieces of quartz that had been found along with some fossil bones and asked Zdansky if he thought it were possible that these might be some sort of tools used by prehistoric men. Although Andersson did admit that natural erosion was “the most probable, or at any rate the least sensational, interpretation of the occurrence of the flakes of quartz,” he also commented that it was quite possible that, nevertheless, early pre-humans might have used such naturally occurring tool-like stones for tools

[199] Noel T. Boaz and Russell L. Ciochon, *"Dragon Bone Hill,"* 8.

[200] Vincent L. Morgan and Spencer G. Lucas, *"Walter Granger, 1872-1941, Paleontologist,".* 21.

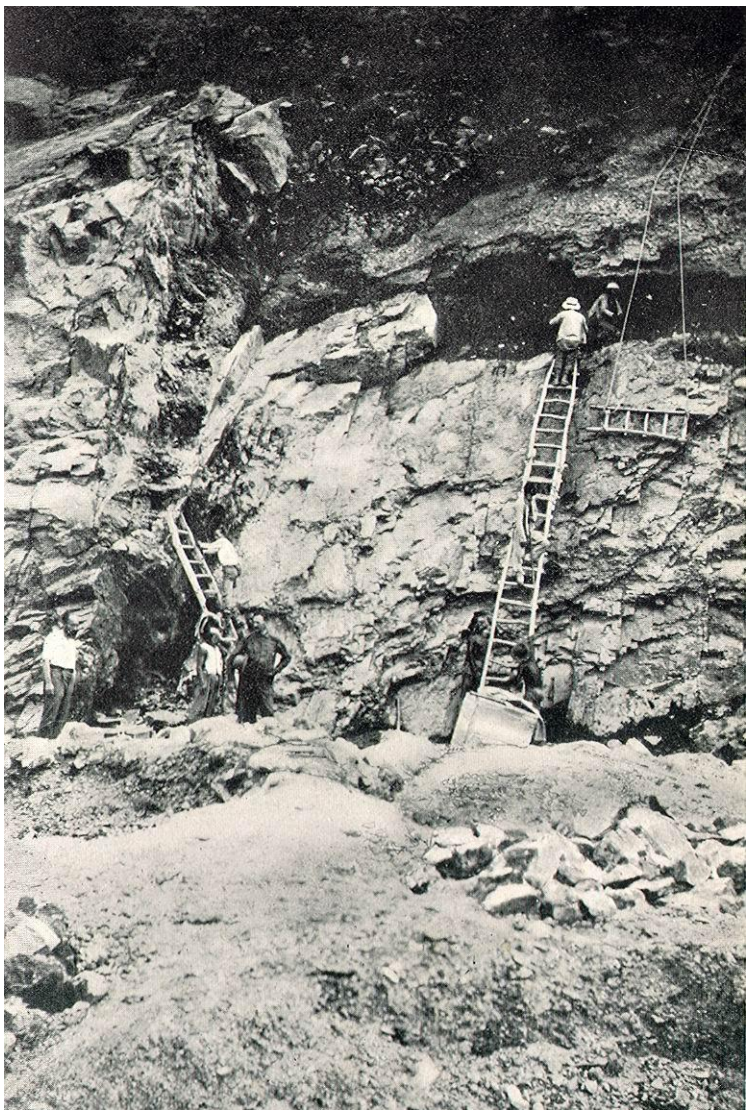

Illustration 4. The digs at Zhoukoudian in the 1920s. Although this was scanned from China Before China: Johan Gunnar Andersson, Ding Wenjiang, and the Discovery of China's Prehistory, the original appears in Andersson's Children of the Yellow Earth.[201]

[201] It was scanned from the secondary source instead of the original source because the picture there was larger and the paper quality superior so it was felt to reproduce better.

before actually fashioning their own. Andersson expressed both his priorities as well as his hope of finding hominid remains one day at the site when he said:

> I have a feeling that there lie here the remains of one of our ancestors and it is only a question of your finding him. Take your time and stick to it till the cave is emptied, if need be.[202]

From the above quote, we can see that Andersson made the find for hominid remains to be a clear priority.

Nevertheless Zdansky did not share either Andersson's priorities or enthusiasm for digging at Longgushan. At the end of the digs, Zdansky went to Henan province to conduct the digs for three-toed horse bones that he had been originally hired for.[203]

When he left the site, however, he kept an important secret from Andersson. Zdansky had found, at Longgushan a tooth, a molar, from what he had described as an "anthropoid ape."

Many years later when asked to explain why he had kept the find secret from Andersson, Zdansky explained:

> I recognized it at once, but I said nothing. You see hominid material is always in the limelight and I was afraid that if it came out there would be such a stir, and I

[202] Noel T. Boaz and Russell L. Ciochon, *"Dragon Bone Hill,"* 9.

[203] Noel T. Boaz and Russell L. Ciochon, *"Dragon Bone Hill,"* 9.

would be forced to hand over material I had a promise to publish. [204]

As the above quote clearly illustrates, Zdansky did not wish for his careful study of the remains to be interrupted and feared that if there were reason to believe that hominid remains were among the fossils found, then he would lose control of the remains and his study of the remains would be interrupted.

When Andersson learned of the discovery, according to the public record, he appears to have taken the matter remarkably well. In his 1938 work, Children of the Yellow Earth, he spoke highly of Zdansky, included an illustration of him, and explained the incident of the unveiling of the tooth in 1926 as follows:

> . . . what was to me personally of much the greatest interest was a communication from Zdansky that in working on the Chou K'ou Tien [Zhoukoudian] material he had found a molar and pre-molar of a creature resembling a human being, which he designated merely Homo sp? He had dug out the molar himself and identified it at Chou K'ou Tien [Zhoukoudian] as belonging to an anthropoid ape. The pre-molar he had discovered only while cleaning the material in Upsala. So the hominid expected by me was found.[205]

[204] Noel T. Boaz and Russell L. Ciochon, *"Dragon Bone Hill,"* 10. The work quotes John Reader's 1981 book *"Missing Links."*

[205] Johan Gunnar Andersson, "*Children of the Yellow Earth –Studies in Prehistoric China,"* 103. Emphasis is in the original.

It seems from this quote that later Andersson preferred, at least publicly, to emphasize that he had been correct in his suspicion that there were hominid remains at Zhoukoudian rather than dwell on the fact that Zdansky had temporarily hidden such remains from him.

Ironically, this tooth was not the only Peking Man tooth that Zdansky had brought home to Sweden from China. Sometime in 1924 or 1925, he found a second hominid molar among the many still unsorted, unidentified bones that he had had shipped the Zhoukoudian site.[206]

Ding Leaves And Weng Assumes His Position At The China Geological Survey.

China Geological Survey. During this time he also taught at Qinghua University. Few details are known about Weng's In 1921, Weng Wenhao succeeded Ding as director of the early life, but he studied physics and geology at Louvain University in Belgium. He received a degree in 1912, at which time he returned to China and became chief of the mining section of the ministry of agriculture and commerce. In this capacity he made many contributions to the development of geological research in China.[207]

[206] Noel T. Boaz and Russell L. Ciochon, *"Dragon Bone Hill,"* 10, -- I have not yet been able to learn why the exact date of the discovery and identification of the second tooth is not known with more exactness.

[207] Howard L. Boorman And Richard C. Howard1970 *"Biographical Dictionary of Republican China, Vol. III,"* 411-412.

llustration 5. Weng Wenhao. Picture comes from The Story of Peking Man – From Archeology to Mystery

Davidson Black Comes To China And Meets Andersson.

At this point in the narrative, we will leave Zdansky and the tooth, but return to him later. First, it is necessary to introduce Davidson Black, a man who Andersson first met in 1921.

Davidson Black, a Canadian physician, was head of the Peking Union Medical College Anatomy Department. He had a long time interest in

aleontology and believed Asia to be the cradle of man. Black had studied under Sir Grafton Elliot Smith in 1914.

Before coming to China, Black had served in world war one as a physician from 1917 until end of war. In 1919 he came to the Peking Union Medical College (PUMC) to serve as a Professor of Neurology and Embryology.

In 1921, Black began a collaboration with Andersson to excavate a Neolithic cave site in a place called Shaguotun, in Manchuria. While assessing coal deposits in the area, Andersson had discovered a cave which contained human skeletons. Although many skeletons were found, they tended to be just a few thousand years old, biologically identical to those of modern humans. Andersson wired Black for assistance with the dig and the identification of the skeletons. Black took the train and arrived at the site on June 22, 1921. Black took the bones to his lab at the Peking Union Medical College. Once there, Black carefully studied the 45 partial or complete skeletons. The results were later published in Palaeontologia Sinica, a journal that Andersson had helped found, and which was subsidized by the China Foundation.[208] One of the conditions put in place by

the National Geological Survey of China on the Peking Man digs was that findings would only be published in certain approved journals. Despite a somewhat irregular publishing schedule, Paleontologia Sinica was one of these approved journals.[209]

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[208] Noel T. Boaz and Russell L. Ciochon, *"Dragon Bone Hill,"* 15-16, Charlotte Furth, "*Ting Wen-chiang, Science and China's New Culture,"* 54.

[209] Magnus Fiskesjo and Chen Xingcan, *"China Before China,"* 56, 60, and 68.

Illustration 6. Davidson Black in China, Picture comes from
The Story of Peking Man –From Archeology to Mystery

At Peking Union Medical College, Black's supervisor, Dr. Henry Houghton, was not pleased with Black's pursuit of this interest and neither were the school's administrators. Houghton had little interest or appreciation of Paleoanthropology.[210] One of the reasons for this lack of interest was Houghton's educational and national background. Houghton was American, a graduate of John Hopkins University Medical School. Traditionally the study of "physical anthropology" was more respected in Europe than it was in the United States.[211]

Black was forced to arrange a compromise about this work with the school administrators and the Rockefeller Foundation who they served and who he was indirectly employed by. Although the bones were in a laboratory

[210] Noel T. Boaz and Russell L. Ciochon, *"Dragon Bone Hill,"* 16.

[211] Noel T. Boaz and Russell L. Ciochon, *"Dragon Bone Hill,"* 16.

at the school, Black agreed to delay study of the bones, and instead focus on teaching during the day and working solely on anatomy department business. Later, in 1922, Black also turned down an offer to accompany the American Museum of Natural History's "missing link expedition," probably for the same reason.[212] Interestingly enough, Black did accompany the expedition for the first leg of its long journey, accompanying it from Beijing to Urga. His purpose was to accompany and escort Roy Chapman Andrew's wife, Yvette, to Urga so she could see off the expedition and then ensure her safe return to Beijing.[213] Although we can, of course, only speculate on Black's motivations for this charitable act, it hints at a strong interest in the expedition and its outcome, as well as perhaps a desire on Black's part to be able to accompany it and take an even more active role.

Problems continued between Black and Houghton over this issue for many years, and, ultimately, they affected events surrounding the Peking Man discoveries even long after Black's death.[214]

Zdansky Takes The Tooth To Sweden And Identifies It.

In 1923, Zdansky sailed for Sweden taking the fossils, including the hominid tooth, with him. Zdansky published a paper on his finds in 1923, and, for a

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[212] Noel T. Boaz and Russell L. Ciochon, *"Dragon Bone Hill,"* 16.

[213] Vincent L. Morgan and Spencer G. Lucas, *"Walter Granger, 1872-1941, Paleontologist,".* 25.

[214] Ironically, years later, following Black's death and the cessation of the digs at Zhoukoudian due to the Japanese invasion, Houghton was put in charge of safeguarding the remains of Peking Man that had been put in storage at the Peking Union Medical College. Houghton had never valued the bones much and continued to undervalue them at this time. There are indications that this may have been one factor in the chain of events that later led to their disappearance.

reader of today, the absence of this molar is conspicuously absent.[215] In fact, it was not until 1926 that Andersson was to learn of the discovery.[216]

Obviously, the question needs to be asked as to why Zdansky kept the find of the hominid tooth to himself.

First, it is documented in several places that he and Andersson had different ideas as what was an important find and what wasn't, particularly in regards to early hominid fossils.

Secondly though, it needs to be stated that identifying a new species on the basis of a single fossil specimen is quite problematic at best, particularly when that specimen is a tooth. (This problem comes up at least twice in the story of Peking Man, once here and earlier with Haberer's tooth.) Misidentification is a problem and, particularly in cases involving hominids, is rarely completely forgotten.[217]

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[215] Jia Lanpo and Huang Weiwen, *"The Story of Peking Man,"* 17.

[216] Noel T. Boaz and Russell L. Ciochon, *"Dragon Bone Hill,"* 10.

[217] In fact, in 1922, Harold Cook, a Nebraska rancher and geologist mailed a tooth he had found on his ranch in 1917 to Henry Fairfield Osborn, the head of the American Museum of Natural History, requesting identification. Osborn identified the tooth as belong to an unknown species of ape, and named this "new species" Hesperopithecus haroldcookii. Although Osborn never claimed that the species was a possible human ancestor, and few scientists considered it as such, the popular publication "Illustrated London News," speculated that it might be and illustrated an article on the discovery with an elaborate depiction of a pair of Cave-man like "Nebraska men." In 1927, when further digs were conducted to learn more about the species, they concluded, based on discoveries of similar teeth amidst other remains, that the tooth had not come from an ape or a primate at all, but instead had come from a pig-like animal known as a peccary. from *"Creationist Arguments: Nebraska Man,"* http://www.talkorigins.org/faqs/homs/a_nebraska.html (accessed March 26, 2005.)

Although the misidentification of the tooth found in Nebraska had not yet taken place, it seems quite likely that Zdansky recognized the danger of committing a similar error.

Zdansky was young and inexperienced, having recently obtained his Ph.D. and undoubtedly knew that the discovery of a primate tooth would overshadow the rest of his work.

Two later discoveries may have helped Zdansky decide to publicize the find of the tooth. The first was while sorting his fossils back in Sweden he discovered among them several teeth that came from a previously unknown species of monkey. The study of these teeth enabled him to conclude that the hominid tooth was not likely that of a monkey of some kind. The second was later in 1924 or 1925, he found a second fossil hominid tooth, a premolar, and decided that it was, indeed, that of a hominid and not an ape and that therefore the other tooth was too. He informed Carl Wiman that he had found hominid teeth but left the species unclassified, instead labeling them as belonging to *homo sp?* [218]

The Need For A New Dig Is Recognized.

Wiman sent Andersson a letter in mid-1926 describing the find. Although Andersson was quite excited and wished to conduct a dig to look for further evidence of early man at Longgushan, he was not the only one.

Henry Fairfield Osborn was also interested. As Granger's employer, Osborn had been aware of the digs from their earliest start. Osborn was director of the American Museum of Natural History. He was also a friend of Teddy Roosevelt and President of the American Association for the Advancement of Science, and undoubtedly one of the, if not the most,

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[218] Noel T. Boaz and Russell L. Ciochon, *"Dragon Bone Hill,"* 10-11.

These teeth are now located in Uppsala at the Evolution Museum of Uppsala University (www.uu.se).

influential men in the field of paleontology at this time. Osborn believed Asia to be the birthplace of modern man and if he could obtain evidence of early hominids for his museum it would be quite a coup. Furthermore, not only had he organized successful digs in far-flung parts of the world before, but he also had the entire resources of the American Museum of Natural History behind him.[219]

If Andersson wished to arrange digs at Longgushan to find further evidence of early hominids, he would have to compete with Osborn for the privilege of doing so. Fortunately for him, Andersson had several resources and connections available that Osborn did not have. Andersson's agreements with the Chinese government to share fossils and archeological finds between the Chinese government and the museum he was planning, the Museum of Far Eastern Antiquities in Stockholm, Sweden was a major help. Secondly Andersson had a good reputation among both Chinese and influential Westerners in China. His knowledge of the country, its people and its archeological sites was virtually unparalleled.[220]

Aside from Granger, Osborn's people were new to China.[221]

Andersson had, however, returned to Sweden in 1925 in order to work on the museum. (Although he hoped to return to China again to live and do more long term work, for several reasons this never happened, although he made one last visit from 1936 to 1938.[222]) Therefore he began

[219] Noel T. Boaz and Russell L. Ciochon, *"Dragon Bone Hill,"* 12.

[220] Noel T. Boaz and Russell L. Ciochon, *"Dragon Bone Hill,"* 13.

[221] Noel T. Boaz and Russell L. Ciochon, *"Dragon Bone Hill,"* 13.

[222] Magnus Fiskesjo and Chen Xingcan, *"China Before China,"* 72.

correspondence with many people in China, including Ding, Weng, and Black to arrange, plan, negotiate and facilitate an upcoming series of digs.[223]

Coincidentally, the Swedish crown prince was scheduled to arrive in Beijing in October of 1926 as part of an around the world tour. The prince was quite enthusiastic about paleontology and archeology and a crucial supporter of Andersson's research as well as a supporter of the founding of the Museum of Far Eastern Antiquities. Andersson was put in charge of arranging events in China for the prince's "archeological and art studies" during his visit.[224]

Elsewhere in China, in 1925 Davidson Black had been promoted to the head of the anatomy department of Peking Union Medical College. Although the political situation and civil war in China made life in Beijing difficult and caused many to leave China, he stayed.

On May 3, 1926 Black received a letter that Andersson had sent him as part of the preparations for the visit. The letter described the itinerary of the Prince and his wife's visit. The trip would start in May with a visit to the United States. Next would come Japan and after that, in October, the Prince was scheduled to arrive in Beijing to ultimately spend two months in China. They wanted to visit Datong in Shaanxi Province, Inner Mongolia, Henan and Shandong Provinces.[225]

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[223] Magnus Fiskesjo and Chen Xingcan, *"China Before China,"* 60-70.

Also individual records of particular pieces of correspondence appear in other sources, such as Dora Hood's biography of Davidson Black.

[224] Noel T. Boaz and Russell L. Ciochon, *"Dragon Bone Hill,"* 13.

[225] Jia Lanpo and Huang Weiwen, *"The Story of Peking Man,"* 24.

Curiously, prior to the trip, Andersson had made a point of corresponding with the prince about a particular act he wished the prince to perform in order to fulfill Andersson's own agenda in China. Andersson wished the prince to do some field exploration as well as actual "hands-on" digging in full view of the Chinese. Andersson believed that many or most Chinese did not see it as appropriate for an educated gentleman to climb mountains and dig in the dirt using his own labor and that this belief hindered the progress of archeology, geology and paleontology in China. Andersson's hope was that someone of as high status as the prince of Sweden might change this view, at least in a small way, by providing an example of an educated, high-status person assisting hands-on in the dirt with a dig.[226]

On October 17, 1926, half a month behind schedule, the royal couple arrived in Beijing.[227] On October 22, the prince attended a meeting called by the Department of Anatomy of the Beijing Union Medical College.[228] Participants at the meeting included Dr. Henry S. Houghton, the head of the Peking Union Medical Committee Executive Committee; Weng Wenhao, Director the Chinese Geological Survey of China; O. Ewerlöf, Swedish Minister to Beijing; Axel Lagrelius, Controller of the Swedish Research Committee (i.e. "the China Committee"); and Andersson and Black. It was announced at this meeting that the Rockefeller Foundation had promised

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[226] Magnus Fiskesjo and Chen Xingcan, *"China Before China,"* 38-48.

[227] Jia Lanpo and Huang Weiwen, *"The Story of Peking Man,"* 24.

Coincidentally, 1926 was also the year of the first entirely-Chinese organized archeological dig, although this did not involve Ding or Andersson. See Magnus Fiskesjo and Chen Xingcan, *"China Before China,"* 64-66.

[228] Jia Lanpo and Huang Weiwen, *"The Story of Peking Man,"* 24.

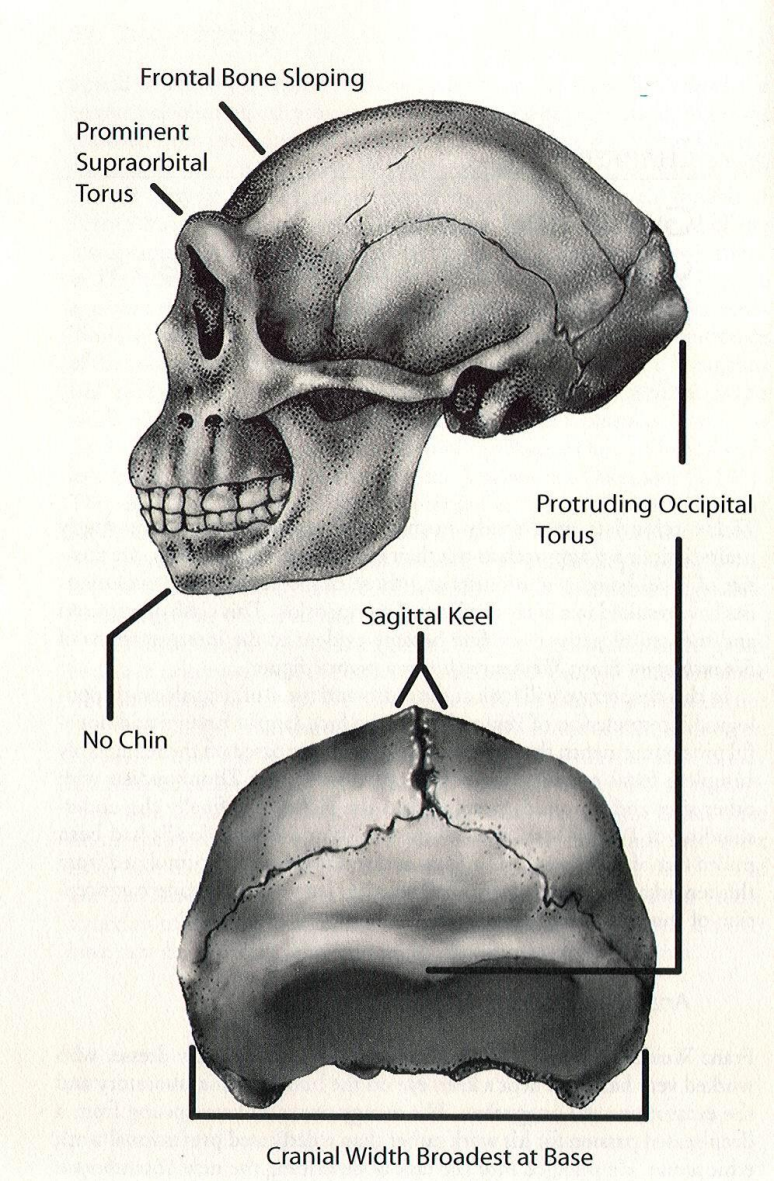

Illustration 7. A diagram of the skull of Peking Man (Homo erectus). Although throughout the period covered during this paper, the species was known only through its teeth, and the skull remained yet to be discovered, this was the ultimate goal of the project. This diagram comes from Dragon Bone Hill—An Ice Age Saga of Homo Erectus, and was done by Franz Weidenreich, Black's successor and supervisor of the digs in the 1930s.

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to fund half the cost of digs for up to $10,000 per year for three years. This news had come in a letter dated July 1 from Edwin R. Embee, the Director of the Division of Studies of the Rockefeller Foundation. The other half of the funding was to come from the Swedish Research Committee, and that, too, was confirmed at this same meeting.[229]

That afternoon an academic welcoming party for the crown prince was sponsored by the Geological Survey of China and held in the auditorium of the college.[230] There were several speakers.[231]

The welcoming address came from Weng Wenhao, followed by a formal response from the Prince.[232] Next a series of scientific reports were offered.

The first of these came from Liang Qichao, a famous reformist, statesman and scholar, who presented a general survey of the archeological work then being done in China.[233]

The second was presented by Father Pierre Teilhard de Chardin, who reported on the Ordos explorations he and father Emile Licent had made.[234]

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[229] Jia Lanpo and Huang Weiwen, *"The Story of Peking Man,"* 24.

[230] Jia Lanpo and Huang Weiwen, *"The Story of Peking Man,"* 26.

[231] Andersson gives a first hand report of this event in *"Children of the Yellow Earth,"* 103-105.

[232] Jia Lanpo and Huang Weiwen, *"The Story of Peking Man,"* 26. This conforms with Andersson's description of events and speakers in *"Children of the Yellow Earth,"* 103.

Note that the list of speakers cited in Noel T. Boaz and Russell L. Ciochon, *"Dragon Bone Hill,"* 17, varies slightly.

[233] Jia Lanpo and Huang Weiwen, *"The Story of Peking Man,"* 26.

[234] Jia Lanpo and Huang Weiwen, *"The Story of Peking Man,"* 26.

The final scientific report was offered by Andersson. He spoke on behalf of Professor Carl Wiman of Sweden about the discoveries that had been made at Uppsala University from studying the fossils found in China. Although dinosaur, giraffe and three toed horse were among the finds covered, the fossil most emphasized was that of the hominid tooth discovered by Zdansky.[235]

Andersson had asked Davidson Black to prepare an abstract about the tooth for presentation at this meeting. Tertiary Man in Asia –the Chou Kou Tien Discovery was the result.[236] This same paper was published in Nature (issue no. 118) soon after.[237]

In his presentation to the assembly, Andersson emphasized that this tooth might be the single most important Swedish archeological discovery ever made in China. Andersson also emphasized that there were not currently any plans for a large scale excavation of the Zhoukoudian site, but that it would be wonderful to see such a project, especially if it were done by the Geological Survey of China with the assistance of Davidson Black, who would represent the Peking Union Medical College and the Rockefeller Foundation.[238]

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[235] Jia Lanpo and Huang Weiwen, *"The Story of Peking Man,"* 26.

[236] Jia Lanpo and Huang Weiwen, *"The Story of Peking Man,"* 26.

[237] Noel T. Boaz and Russell L. Ciochon, *"Dragon Bone Hill,"* 17-18.

Abstracts from the report are available on 18 of this work.

Nature is and was a very impressive place for a scientific discovery to be announced and this was the first such publication in this journal by a member of the staff of the Peking Union Medical College.

[238] Jia Lanpo and Huang Weiwen, *"The Story of Peking Man,"* 27.

The announcement soon won both praise and criticism. Among those who were enthusiastic were Ding Wenjiang, Weng Wenhao, Davidson Black, and Amadeus W. Grabau.[239]

Among the critics was Teilhard de Chardin, who two days later wrote a lengthy note to Black expressing his concerns that the announcement and public labeling of the tooth as hominid was risky and premature.[240]

Before Black could come to a conclusion concerning the teeth, Amadeus W. Grabau announced that they had come from a species he dubbed "Peking Man."[241] Grabau, an invertebrate paleontologist and professor of geology, was an American of German descent who had come to China in 1920 to teach at Peking University. Like Andersson, he became an adviser to the Geological Survey of China,[242] where he was given the title "Chief Paleontologist."[243]

On October 5, Davidson Black presented a report to Houghton, his supervisor, at Peking Union Medical College proposing that the Rockefeller Foundation fund scientific digs at Zhoukoudian. The report also suggested

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[239] Jia Lanpo and Huang Weiwen, *"The Story of Peking Man,"* 27.

[240] Jia Lanpo and Huang Weiwen, *"The Story of Peking Man,"* 27. This page includes the complete text of the letter.

[241] Dora Hood, "*Davidson Black –A Biography,"* 84.

[242] Dora Hood, "*Davidson Black –A Biography,"* 59-60.

Noel T. Boaz and Russell L. Ciochon, *"Dragon Bone Hill,"* 12, states "invertebrate paleontologist and professor of geology."

[243] Vincent L. Morgan and Spencer G. Lucas, *"Walter Granger, 1872-1941, Paleontologist,".* 19-20.

that the college establish an institute for the study of human biology. Black also sent a letter to Weng Wenhao to develop the proposal.[244]

In the spring of 1927, following the conclusion of a legal agreement for the digs and the obtaining of funding from the Rockefeller Foundation, an organized dig began at Zhoukoudian.[245] Ding Wenjiang was Honorary Director of the co-operative leadership group.[246] Black and Weng Wenhao also shared important responsibilities at the site.[247] There were four specialists in charge of fieldwork, Li Jie, Liu Delin, and Xie Renfu, all Chinese, and Anders Birger Bohlin, a Swedish student of Wiman.[248] There was one other man, Bohlin's servant, who did the cooking, the washing and other such chores.[249] [250]

Conclusions

In conclusion, we have seen that the events that led to the Peking Man excavations at Zhoukoudian which began in 1926 and continue today were much more complex and international in character than is generally recognized. Reports which give total credit exclusively to either Chinese or

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[244] On Jia Lanpo and Huang Weiwen, *"The Story of Peking Man,"* 29-40, the exchange of letters is covered in great detail.

[245] Jia Lanpo and Huang Weiwen, *"The Story of Peking Man,"* 41.

[246] Jia Lanpo and Huang Weiwen, *"The Story of Peking Man,"* 41.

[247] Jia Lanpo and Huang Weiwen, *"The Story of Peking Man,"* 41.

[248] Jia Lanpo and Huang Weiwen, *"The Story of Peking Man,"* 41.

[249] Jia Lanpo and Huang Weiwen, *"The Story of Peking Man,"* 41.

I have not yet been able to find the ethnicity or nationality of this servant.

[250] In 1929, the China Geological Survey joined with the newly established Academy of Sciences at Beijing. Weng wrote many articles and two books entitled *"Mineral Resources of China"* and *"Earthquake Sequences in China."*

non-Chinese paleontologists are simplistic at best, misleading at worst. Although nationalism was among the motivating factors behind many paleontological efforts of the late nineteenth and early twentieth century, conditions in early twentieth century China were such that an exclusively nationalistic effort by any single nation to uncover Peking Man was impossible. As Ding Wenjiang's story illustrates, China had a severe shortage of native Chinese who were trained in the scientific disciplines of geology and paleontology. Therefore the Chinese were not able to undertake a modern paleontological excavation without foreign assistance. Nevertheless, the Chinese were not willing to simply hand over control of paleontological sites to foreign interests either. Instead they wished to negotiate agreements where foreign expertise could be utilized in a way that would benefit China while satisfying the foreign parties involved. Such agreements were not always possible and required a certain level of ability to negotiate across cultural boundaries by both the Chinese and the non-Chinese involved. Fortunately both Ding Wenjiang and Johan Gunnar Andersson had this ability to negotiate across intercultural boundaries as well as the ability to identify and work with available resources to acquire the expertise and funds necessary to make the Peking Man digs of the 1920s a success. By working with Sweden and Swedes the Chinese acquired much needed Western expertise and Western funding for the digs. By working with the Chinese, the Swedes acquired access to Chinese archeological and paleontological sites, and through these sites prestige that came with success in the fields of archeology and paleontology. Ironically, one reason Andersson increasingly focussed his attention on archeology and paleontology was that although the National Geological Survey of China had

hired him to survey China's mineral resources, this agency was increasingly unable to pay his salary. By shifting his efforts to areas that held a greater appeal in Sweden, such as archeology and paleontology, he was able to acquire Swedish funding and improve his own financial situation.

Of course, the Peking Man digs were not an exclusively Sino-Swedish undertaking. Funding and expertise came from many sources originating in many nations, particularly the American Rockefeller Foundation. And the Rockefeller Foundation also had founded the Peking Union Medical College which employed Davidson Black.

The behind the scenes work of not just Andersson, but Ding in particular, is often not given the amount of attention and time it deserves in many reports. The interactions between the Chinese and Swedes, both officially and unofficially, in the areas of geology, archeology and paleontology in China, also seem to deserve more attention than they have traditionally received. Although the Peking Man remains were discovered long ago, it seems they still spawn many interesting avenues for productive research, not just in paleontology but also in history.

APPENDIX

CHINESE NAMES AND THEIR EQUIVALENTS.

Pinyin	**Wade Giles**	**Commonly Used Name**	**Characters**
Cai Chun	Ts'ai Chun		蔡钧
Zhou Zanheng		T.C. Chow	周赞衡
Ding Wenjiang	Ting Wen-chiang		丁文江
Kang Youwei	Kang Yu-wei		康有为
Long Zhang a.k.a. Long Yanxian	Lung Chang a.k.a. Lung Yen-hsien		龙璋
Wu Zhihui	Wu Chih-Hui		吴稚辉
Weng Wenhao	Wong Wen-hao		翁文灏
Xu Hongzu a.k.a. Xu Xiake	Hsu Hung-tsu		徐宏祖
Yang Zhongjian		C.C. Young	杨钟健
Liang Qichao	Liang Ch'i-chao		梁启超

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